



\$100,000,000* Royal Bank of Canada Exchange Traded Notes due July 19, 2034 Linked to the Yorkville MLP Distribution Growth Leaders LiquidSM PR Index

General

- The Exchange Traded Notes due July 19, 2034 Linked to the Yorkville MLP Distribution Growth Leaders LiquidSM PR Index (the "ETNs") are designed for investors who seek exposure to the Yorkville MLP Distribution Growth Leaders LiquidSM PR Index (the "Index"). If the value of the Index declines, investors should be willing to lose up to 100% of their investment. Any payment on the ETNs is subject to our ability to pay our obligations as they become due.
- The ETNs may pay a quarterly coupon as described in this pricing supplement. Since the payment of any quarterly coupon is uncertain, investors should not expect to receive fixed periodic interest payments.
- The ETNs are senior unsecured medium-term notes of Royal Bank of Canada, Series F, maturing July 19, 2034, subject to adjustment as provided herein. The denomination and stated principal amount of each ETN is \$20. Any future issuances of ETNs may be issued at a price that is higher or lower than the stated principal amount, based on the indicative value of the ETNs at that time.

Key Terms

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| Issuer: | Royal Bank of Canada ("Royal Bank") |
| Index: | The securities considered for inclusion in the Index must be publicly traded securities that represent the limited partner interests of a master limited partnership that is traded on a recognized U.S. securities exchange (each, an "MLP"). We refer to the MLPs whose securities are included in the Index as "Constituent MLPs" and those securities as the "Index Constituents." See "The Index" in this pricing supplement. |
| Initial Trade Date: | July 24, 2014 |
| Initial Settlement Date: | July 29, 2014 |
| Payment at Maturity: | If your ETNs have not previously been repurchased by Royal Bank, you will receive at maturity a cash payment, per \$20 principal amount ETN, calculated as (a) the product of (i) \$20 and (ii) the Index Factor as of the last Valuation Date in the Final Measurement Period, plus (b) the final Coupon Payment determined on the Final Valuation Date, if any, minus (c) the fee shortfall on the Final Valuation Date, if any. In no event, however, will the payment at maturity be less than zero. |
| Index Factor: | The Index Factor on any Valuation Date will be equal to the Final Index Level on that Valuation Date divided by the Initial Index Level. The closing level is not the same as the closing price or any other trading price of the ETNs in the secondary market. |
| Repurchase of the ETNs at Your Option: | Subject to the requirements described below, you may offer the applicable minimum repurchase amount or more of your ETNs to Royal Bank for repurchase on any Business Day during the term of the ETNs until the Business Day immediately preceding the last scheduled Valuation Date that is neither the first Valuation Date in the Call Measurement Period or the Final Measurement Period, as applicable. The minimum repurchase amount will be equal to \$1,000,000 stated principal amount of ETNs (50,000 ETNs), except that we or RBC Capital Markets, LLC ("RBCCM"), as the Calculation Agent, may from time to time reduce, in part or in whole, the minimum repurchase amount. Any such reduction will be applied on a consistent basis for all holders of the ETNs at the time the reduction becomes effective. The trading day immediately succeeding the date you offer your ETNs for repurchase will be the valuation date applicable to such repurchase. If you elect to offer your ETNs for repurchase, and the requirements for acceptance by Royal Bank are met, you will receive a cash payment in an amount equal to the "daily repurchase value," calculated as a cash payment per \$20 principal amount ETN equal to (a) the product of (i) \$20 and (ii) the Index Factor on such applicable Valuation Date, plus (b) the Coupon Payment determined on such Valuation Date, if any, minus (c) the fee shortfall on such Valuation Date, if any. In no event, however, will the daily repurchase value be less than zero. In addition, you will receive the Coupon Payment with respect to the Coupon Valuation Date immediately preceding the applicable Valuation Date if, on the relevant Valuation Date, the Ex-Date with respect to that Coupon Payment has not yet occurred. RBCCM may charge investors an additional fee of up to 0.125% times the daily repurchase value for each ETN that is repurchased at the investor's option. |
| Repurchase of the ETNs at Our Option: | We have the right to repurchase the ETNs, in whole but not in part, on any Business Day during the term of the ETNs on or after January 29, 2015 to and including July 18, 2034. Upon any such repurchase, you will receive a cash payment in an amount equal to the "call settlement value," calculated as a cash payment per \$20 principal amount ETN equal to (a) the product of (i) \$20 and (ii) the Index Factor as of the last Valuation Date in the Call Measurement Period, plus (b) the Coupon Payment determined on such last Valuation Date, if any, minus (c) the fee shortfall on such last Valuation Date, if any. In no event, however, will the call settlement value be less than zero. In addition, you will receive the Coupon Payment with respect to the Coupon Valuation Date immediately preceding such last Valuation Date if, on such last Valuation Date, the Ex-Date with respect to that Coupon Payment has not yet occurred. |

Investing in the ETNs involves a number of risks. See "Risk Factors" beginning on page PS-14 of this pricing supplement, page S-1 of the accompanying prospectus supplement and page 1 of the accompanying prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the ETNs or passed upon the accuracy or the adequacy of this pricing supplement or the accompanying prospectus supplement and the prospectus. Any representation to the contrary is a criminal offense.

The ETNs will not constitute deposits insured by the Canada Deposit Insurance Corporation, the U.S. Federal Deposit Insurance Corporation or any other Canadian or U.S. governmental agency or instrumentality.

* The agent for this offering, RBCCM, is our affiliate. We sold \$4,000,000 in principal amount on the Initial Trade Date through RBCCM and through one or more dealers purchasing as principal through RBCCM. Additional ETNs may be offered and sold after the Initial Trade Date from time to time through RBCCM and one or more dealers at a price that is higher or lower than the stated principal amount of \$20 per ETN, based on the indicative value of the ETNs at that time. Sales of the ETNs after the Initial Trade Date will be made at market prices prevailing at the time of sale, at prices related to market prices or at negotiated prices. We will receive proceeds equal to 100% of the price that the ETNs are sold to the public, less any commissions paid to RBCCM. We may not sell the full amount of ETNs offered by this pricing supplement, and may discontinue sales of the ETNs at any time. Delivery of ETNs in book-entry form only will be made through The Depository Trust Company ("DTC"). RBCCM and any other dealer in any subsequent distribution are expected to charge normal commissions for the purchase of the ETNs. In exchange for providing certain services relating to the distribution of the ETNs, RBCCM, a member of the Financial Industry Regulatory Authority, Inc. ("FINRA"), or another FINRA member may receive all or a portion of the Investor Fee. In addition, RBCCM may charge investors a fee of up to 0.125% times the daily repurchase value for each ETN that is repurchased at the investor's option. Please see "Supplemental Plan of Distribution (Conflicts of Interest)" in this pricing supplement for more information. This Amendment No. 4, dated January 8, 2016, to the pricing supplement dated July 24, 2014 (as amended, the "pricing supplement"), is being filed for the purpose of updating (i) "The Index" and (ii) "Material United States Federal Income Tax Considerations." Otherwise, all terms of the ETNs remain as stated in the pricing supplement as amended through Amendment No. 3. We filed a new registration statement, base prospectus and prospectus supplement on January 8, 2016. The new base prospectus and prospectus supplement replace the base prospectus and prospectus supplement dated April 30, 2015.

RBC Capital Markets, LLC

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| Coupon Payment: | On each Coupon Payment Date, for each \$20 principal amount ETN, you will receive a cash payment equal to (a) the MLP Distribution Amount minus (b) the Investor Fee, each calculated as of the corresponding Coupon Valuation Date. To the extent that the MLP Distribution Amount is less than the Investor Fee, there will be no Coupon Payment made on the corresponding Coupon Payment Date, and an amount equal to the absolute value of the difference between the MLP Distribution Amount and the Investor Fee calculated on that Coupon Valuation Date (the “fee shortfall”) will be added to the Investor Fee with respect to the next Coupon Valuation Date. The Coupon Payment will be paid to the holder of an ETN as of the applicable Coupon Record Date. |
| Repurchase Mechanics: | You may offer your ETNs to Royal Bank for repurchase on any Business Day during the term of the ETNs through the Business Day immediately preceding the last scheduled Valuation Date that is neither the first Valuation Date in the Call Measurement Period or the Final Measurement Period, as applicable. To offer your ETNs for repurchase, you and your broker must deliver an irrevocable offer for repurchase to Royal Bank no later than 4:00 p.m., New York City time, on the Business Day immediately preceding the applicable Valuation Date and follow the procedures set forth under “Specific Terms of the ETNs—Repurchase Procedures.” If you fail to comply with these procedures, your offer will be deemed ineffective and Royal Bank will not be obligated to repurchase your ETNs. Unless we have repurchased the ETNs at our option or the scheduled Repurchase Date is postponed as described in this pricing supplement, the final day on which Royal Bank will repurchase your ETNs will be July 12, 2034. |
| Valuation Date: | The applicable Valuation Date means (i) with respect to a repurchase at the option of the ETN holder, the Trading Day immediately succeeding the Business Day on which you deliver a valid repurchase notice to Royal Bank, (ii) with respect to a repurchase of the ETNs at our option, each of the five Trading Days during the Call Measurement Period and (iii) with respect to the Maturity Date, the five Trading Days during the Final Measurement Period, ending on the Final Valuation Date. The “Final Valuation Date” will be the Trading Day that falls on July 14, 2034. If any of the applicable Valuation Dates, including the last Valuation Date in the Call Measurement Period or the Final Valuation Date, is not a Trading Day, then such Valuation Date, last Valuation Date in the Call Measurement Period or Final Valuation Date shall be the next following Trading Day. If a Market Disruption Event occurs or is continuing on any Valuation Date (including the last Valuation Date in the Call Measurement Period or the Final Valuation Date), then such Valuation Date will be postponed to the next Trading Day on which a Market Disruption Event does not occur or is not continuing. See “Specific Terms of the ETNs—Market Disruption Events.” |
| Repurchase Date: | A Repurchase Date is the third Business Day following the related Valuation Date. Unless we have repurchased the ETNs at our option or the scheduled Repurchase Date is postponed as described herein, the final day on which Royal Bank will repurchase your ETNs at your option will be July 12, 2034. As such, we anticipate that you must offer your ETNs for repurchase no later than July 6, 2034. A Repurchase Date for a repurchase of the ETNs at our option will be the third Trading Day following the last Valuation Date in the Call Measurement Period. |
| Coupon Valuation Date: | The 15 th of February, May, August and November of each calendar year (or if any such day is not a scheduled Trading Day, the next succeeding scheduled Trading Day) as well as the Final Valuation Date, any Valuation Date corresponding to a Repurchase Date for a repurchase of the ETNs at the option of the holder and the last Valuation Date in the Call Measurement Period, with respect to a repurchase of the ETNs at our option. |
| Coupon Payment Date: | The fifteenth Business Day following the applicable Coupon Valuation Date, provided that the Coupon Payment Date corresponding to the Final Valuation Date, any Valuation Date corresponding to a Repurchase Date for a repurchase of the ETNs at the option of the holder, or the last Valuation Date in the Call Measurement Period, with respect to a repurchase of the ETNs at our option, will be the Maturity Date or the related Repurchase Date, as applicable. In addition, if a Repurchase Date or the Maturity Date occurs prior to a scheduled Coupon Payment Date for which the Coupon Payment has been determined but not yet paid, instead of such Coupon Payment being paid on the regularly scheduled Coupon Payment Date, such Coupon Payment will be paid on either (i) the Maturity Date or (ii) the Repurchase Date applicable to a Valuation Date if, as of such Valuation Date with respect to a repurchase at the option of the holder or as of the last Valuation Date in the Call Measurement Period, as applicable, the Ex-Date with respect to such Coupon Payment has not yet occurred, as applicable. |
| Coupon Period: | With respect to each Coupon Valuation Date, the period commencing on, but excluding, the previous Coupon Valuation Date (or, with respect to the first Coupon Period, commencing on but excluding the initial trade date) to, and including, such Coupon Valuation Date. |
| Coupon Record Date: | With respect to each Coupon Payment Date, the ninth scheduled Business Day following the corresponding Coupon Valuation Date. |
| Ex-Date: | With respect to a Coupon Payment, the first Exchange Business Day on which the ETNs trade without the right to receive such Coupon Payment. Under current NYSE Arca practice, the Ex-Date will generally be the second Exchange Business Day prior to the applicable Coupon Record Date. |
| MLP Distribution Amount: | As of any Coupon Valuation Date, an amount equal to the gross cash distributions that a “reference holder” would have been entitled to receive in respect of the Index Constituents held by such reference holder on the “record date” with respect to such Index Constituents, for those cash distributions whose “ex-dividend date” occurs during the Coupon Period with respect to such Coupon Valuation Date. A “reference holder” is, as of any date of determination, a hypothetical holder of a number of units of each Index Constituent equal to the product of (a) the number of units of such Index Constituent as of such date of determination; provided, however, that during the Final Measurement Period or a Call Measurement Period, a reference holder would be considered to own 80%, 60%, 40%, 20% and 0% of such number of units, respectively, on the first, second, third, fourth and last Valuation Dates of the Final Measurement Period or a Call Measurement Period, as applicable, and (b) the Multiplier. The reference holder is intended to reflect the hypothetical exposure the holder of a single ETN would have to each Index Constituent at any given time. Notwithstanding the foregoing, with respect to cash distributions for an Index Constituent that are scheduled to be paid prior to the applicable Ex-Date, if, and only if, the relevant Constituent MLP fails to pay the distribution to holders of such Index Constituent by the scheduled payment date for such distribution, such distribution will be assumed to be zero for the purposes of calculating the applicable MLP Distribution Amount. |
| Multiplier: | The Multiplier is equal to 0.0852079, the quotient of \$20 divided by the Initial Index Level. |
| Initial Index Level: | 234.72, the closing level of the Index on the Initial Trade Date. |
| Final Index Level: | As determined by the Calculation Agent, the arithmetic mean of the Index closing levels measured on each Valuation Date during the Call Measurement Period or the Final Measurement Period, or the Index closing level on any Valuation Date relating to a Repurchase Date for a repurchase at the option of the holder. |
| Investor Fee: | With respect to any Coupon Valuation Date, including the Final Valuation Date or the last Valuation Date in the Call Measurement Period, the Investor Fee will be equal to (a) (i) the annual investor fee multiplied by (ii) the number of days in the Coupon Period with respect to such Coupon Valuation Date divided by 365 multiplied by (iii) \$20 multiplied by (iv) the Index Factor, plus (b) the fee shortfall from the previous Coupon Valuation Date, if any. There will only be a fee shortfall from the previous Coupon Valuation Date if the MLP Distribution Amount on such previous Coupon Valuation Date minus the Investor Fee on such previous Coupon Valuation Date was negative. In such case, the fee shortfall will be equal to the absolute value of such negative number. The annual investor fee is equal to 0.90%. Because the Investor Fees reduce your Coupon Payment and may reduce the amount of your return at maturity or upon repurchase, the level of the Index must increase by an amount equal to the percentage of the principal amount represented by the Investor Fee, minus the Coupon Payments, if any, in order for you to receive an aggregate amount over the term of the ETNs equal to at least the principal amount of your investment. If the level of the Index decreases or does not increase sufficiently, you will receive less, and possibly significantly less, than the principal amount of your investment at maturity or upon repurchase by Royal Bank. |
| Listing: | The ETNs are listed on NYSE Arca under the ticker symbol “YGR0.” As long as an active secondary market in the ETNs exists, we expect that investors will purchase and sell the ETNs primarily in this secondary market. |
| Index Symbol: | The level of the Index is reported by Bloomberg L.P. under the ticker symbol “YGMILL Index” and by Thomson Reuters (including any successor service, “Reuters”) under the ticker symbol “.YGMILL”. |
| Intraday Indicative Value Symbol: | YGROIV (Bloomberg) |
| CUSIP/ISIN: | 78011D104/ US78011D1046 |

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You should read this pricing supplement together with the accompanying prospectus supplement dated January 8, 2016 and the prospectus dated January 8, 2016, relating to our Medium-Term Notes of which these ETNs are a part. You should rely only on the information contained in this Pricing Supplement, and in the documents listed below in making your decision to invest in the ETNs. You may access these documents on the SEC website at www.sec.gov as follows (or if such address has changed, by reviewing our filings for the relevant date on the SEC website):

- Prospectus Supplement dated January 8, 2016:

<http://www.sec.gov/Archives/edgar/data/1000275/000121465916008811/p14150424b3.htm>

- Prospectus dated January 8, 2016:

<http://www.sec.gov/Archives/edgar/data/1000275/000121465916008810/j18160424b3.htm>

Our Central Index Key, or CIK, on the SEC website is 1000275.

This pricing supplement, together with the documents listed above, contains the terms of the ETNs and supersedes all other prior or contemporaneous oral statements as well as any other written materials including preliminary or indicative pricing terms, fact sheets, correspondence, trade ideas, structures for implementation, sample structures, brochures or other educational materials of ours. You should carefully consider, among other things, the matters set forth in “Risk Factors” in this pricing supplement and the accompanying prospectus supplement, as the ETNs involve risks not associated with conventional debt securities. You should consult your investment, legal, tax, accounting and other advisers before deciding to invest in the ETNs. You should rely only on the information contained in this document or in any documents to which we have referred you. We have not authorized anyone to provide you with information that is different. This document may only be used where it is legal to sell these ETNs. The information in this document may only be accurate on the date of this document.

The distribution of this pricing supplement and the accompanying prospectus supplement and prospectus and the offering of the ETNs in some jurisdictions may be restricted by law. If you possess this pricing supplement, you should find out about and observe these restrictions.

As used in this pricing supplement, the “Company,” “we,” “Royal Bank,” “us” or “our” refers to Royal Bank of Canada.

SUMMARY

The following is a summary of terms of the ETNs, as well as a discussion of risks and other considerations you should take into account when deciding whether to invest in the ETNs. References to the “prospectus” mean our accompanying prospectus, dated January 8, 2016, and references to the “prospectus supplement” mean our accompanying prospectus supplement, dated January 8, 2016.

We may, without providing you notice or obtaining your consent, create and issue ETNs in addition to those offered by this pricing supplement having the same terms and conditions as the ETNs. We may consolidate the additional ETNs to form a single class with the outstanding ETNs. However, we are under no obligation to issue or sell additional ETNs at any time, and if we do sell additional ETNs, we may limit or restrict such sales, and we may stop selling additional ETNs at any time. If we stop selling additional ETNs, the price and liquidity of the ETNs in the secondary market could be materially and adversely affected.

What are the ETNs and how do they work?

The ETNs are unsecured medium-term notes of Royal Bank of Canada (“Royal Bank”), the return on which is linked to the performance of the Yorkville MLP Distribution Growth Leaders LiquidSM PR Index (the “Index”).

We may pay a quarterly coupon as described in this pricing supplement. Since the payment of any quarterly coupon is uncertain, investors should not expect to receive fixed periodic interest payments. You may receive less than the principal amount at maturity and are fully exposed to any decline in the Index. Depreciation of the Index will reduce your payment at maturity or upon repurchase, and you could lose your entire investment.

For a description of how the payment at maturity and upon repurchase, respectively, are calculated, please refer to the “Specific Terms of the ETNs—Payment at Maturity” and “Specific Terms of the ETNs—Payment upon Repurchase” sections herein.

What is the Index and who publishes the level of the Index?

The Index was created by Yorkville Capital Management LLC (“Yorkville”), as index sponsor (the “Index Sponsor”). Solactive AG acts as index calculation agent (the “Index Calculation Agent”). The Index tracks the performance of shares of 25 selected master limited partnerships, each of which is publicly traded on a recognized U.S. securities exchange. The securities considered for inclusion in the Index must be publicly traded securities that represent the limited partner interests of a master limited partnership (each, an “MLP”).

The Index was established on January 8, 2014. The Index is rebalanced on a semi-annual basis in May and November of each year over a five-day period. On the first Business Day immediately succeeding the third Friday of any such month, the weight of each Index Constituent will be adjusted. In addition to the semi-annual rebalancings, the Index is continually reviewed for changes, or operational adjustments, to the Index composition necessitated by extraordinary corporate actions, including mergers, takeovers, spin-offs, delistings and bankruptcy filings involving the Constituent MLPs. Changes to the Index may occur between the semi-annual review periods if a specific corporate event makes an Index Constituent ineligible. The Index is a price return index.

For more information, including information about the historical performance of the Index, please refer to “The Index” in this pricing supplement.

How will the Coupon Payments be determined for the ETNs?

On each Coupon Payment Date, for each \$20 principal amount ETN, you will receive a cash payment equal to (a) the MLP Distribution Amount minus (b) the Investor Fee, each calculated as of the corresponding Coupon Valuation Date.

The stated principal amount of each ETN is \$20.

To the extent that the MLP Distribution Amount is less than the Investor Fee, there will be no Coupon Payment made on the corresponding Coupon Payment Date, and an amount equal to the absolute value of the difference between the MLP Distribution Amount and the Investor Fee calculated on such Coupon Valuation Date (the “fee shortfall”) will be added to the Investor Fee with respect to the next Coupon Valuation Date.

The MLP Distribution Amount, as of any Coupon Valuation Date, will be an amount equal to the gross cash distributions that a “reference holder” would have been entitled to receive in respect of the Index Constituents held by such reference holder on the “record date” with respect to such Index Constituents, for those cash distributions whose “ex-dividend date” occurs during the Coupon Period with respect to such Coupon Valuation Date. A “reference holder” is, as of any date of determination, a hypothetical holder of a number of units of each Index Constituent equal to the product of (a) the number of units of such Index Constituent as of such date of determination; provided, however, that during the Final Measurement Period or a Call Measurement Period, a reference holder would be considered to own 80%, 60%, 40%, 20% and 0% of such number of units, respectively, on the first, second, third, fourth and last Valuation Dates of the Final Measurement Period or a Call Measurement Period, as applicable, and (b) the Multiplier. The reference holder is intended to reflect the hypothetical exposure the holder of a single ETN would have to each Index Constituent at any given time.

Notwithstanding the foregoing, with respect to cash distributions for an Index Constituent that are scheduled to be paid prior to the applicable Ex-Date (as defined below), if, and only if, the Constituent MLP fails to pay the distribution to holders of such Index Constituent by the scheduled payment date for such distribution, such distribution will be assumed to be zero for the purposes of calculating the applicable MLP Distribution Amount.

The Multiplier is equal to 0.0852079, the quotient of \$20 divided by the Initial Index Level.

The Investor Fee, with respect to any Coupon Valuation Date, including the Final Valuation Date or the last Valuation Date in the Call Measurement Period, will be equal to (a) (i) the annual investor fee multiplied by (ii) the number of days in the Coupon Period with respect to such Coupon Valuation Date divided by 365 multiplied by (iii) \$20 multiplied by (iv) the Index Factor, plus (b) the fee shortfall from the previous Coupon Valuation Date, if any. There will only be a fee shortfall from the previous Coupon Valuation Date if the MLP Distribution Amount on such previous Coupon Valuation Date minus the Investor Fee on such previous Coupon Valuation Date was negative. In such case, the fee shortfall is equal to the absolute value of such negative number.

The annual investor fee is equal to 0.90%.

Because the Investor Fees reduce your Coupon Payment and may reduce the amount of your return at maturity or upon repurchase, the level of the Index must increase by an amount equal to the percentage of the principal amount represented by the Investor Fee, minus the Coupon Payments, if any, in order for you to receive an aggregate amount over the term of the ETNs equal to at least the principal amount of your investment. If the level of the Index decreases or does not increase sufficiently, you will receive less, and possibly significantly less, than the principal amount of your investment at maturity or upon repurchase by Royal Bank.

The Index Factor on any Valuation Date will be equal to the Final Index Level on that Valuation Date divided by the Initial Index Level.

The Initial Index Level is 234.72, the closing level of the Index on the Initial Trade Date.

The closing level of the Index on any Trading Day will be published on Reuters under the ticker symbol “.YGMLL”. If a Valuation Date is postponed, the Calculation Agent may determine the closing level of the Index. See “Specific Terms of the ETNs—Market Disruption Events.”

A Coupon Period with respect to each Coupon Valuation Date is the period commencing on, but excluding, the previous Coupon Valuation Date (or, with respect to the first Coupon Period, commencing on but excluding the initial trade date) to, and including such Coupon Valuation Date.

For a further description of how your Coupon Payment will be calculated, see “—Hypothetical Examples—Hypothetical Coupon Payment Calculation” below and “Specific Terms of the ETNs” in this pricing supplement.

When will the Coupon Payment be paid?

A Coupon Payment Date will be the fifteenth Business Day following the applicable Coupon Valuation Date, provided that the Coupon Payment Date corresponding to the Final Valuation Date, any Valuation Date corresponding to a Repurchase Date for a repurchase of the ETNs at the option of the holder, or the last Valuation Date in the Call Measurement Period, with respect to a repurchase of the ETNs at our option, will be the Maturity Date or the related Repurchase Date, as applicable. In addition, if a Repurchase Date or the Maturity Date occurs prior to a scheduled Coupon Payment Date for which the Coupon Payment has been determined but not yet paid, instead of such Coupon Payment being paid on the

regularly scheduled Coupon Payment Date, such Coupon Payment will be paid on either (i) the Maturity Date or (ii) the Repurchase Date applicable to a Valuation Date if, as of such Valuation Date with respect to a repurchase at the option of the holder or as of the last Valuation Date in the Call Measurement Period, as applicable, the Ex-Date with respect to such Coupon Payment has not yet occurred, as applicable.

A Coupon Valuation Date will be the 15th of February, May, August and November of each calendar year (or if any such day is not a scheduled Trading Day, the next succeeding scheduled Trading Day) as well as the Final Valuation Date, any Valuation Date corresponding to a Repurchase Date for a repurchase of the ETNs at the option of the holder and the last Valuation Date in the Call Measurement Period, with respect to a repurchase of the ETNs at our option. Coupon Valuation Dates are subject to adjustment as provided in “Specific Terms of the ETNs—Market Disruption Events.”

The Coupon Payment will be paid to the holder of an ETN as of the applicable Coupon Record Date, which will be the ninth scheduled Business Day following the corresponding Coupon Valuation Date.

How will payment at maturity or payment at repurchase be determined for the ETNs?

Unless we have previously repurchased your ETNs, either at your election or at ours, the ETNs will mature on the third Trading Day after the Final Valuation Date, which is scheduled to be July 19, 2034, subject to adjustment as provided in “Specific Terms of the ETNs—Market Disruption Events.”

Payment at Maturity

If your ETNs have not previously been repurchased by Royal Bank, you will receive at maturity a cash payment, per \$20 principal amount ETN, calculated as (a) the product of (i) \$20 and (ii) the Index Factor as of the last Valuation Date in the Final Measurement Period, plus (b) the final Coupon Payment determined on the Final Valuation Date, if any, minus (c) the fee shortfall on the Final Valuation Date, if any. In no event, however, will the payment at maturity be less than zero. Any payment on the ETNs is subject to our ability to pay our obligations as they become due.

The “Final Measurement Period” will be the five Valuation Dates ending on the Final Valuation Date, subject to adjustment as described in “Specific Terms of the ETNs—Market Disruption Events.”

The Index Factor on the Final Valuation Date will equal the Final Index Level divided by the Initial Index Level. If the ETNs undergo a split or reverse split, the closing indicative value will be adjusted accordingly. See “Description of the ETNs—Split or Reverse Split of the ETNs” in this pricing supplement.

The fee shortfall on the Final Valuation Date will be, if the MLP Distribution Amount is less than the Investor Fee, as each are determined on the Final Valuation Date, equal to the absolute value of the difference between such MLP Distribution Amount and such Investor Fee. If such MLP Distribution Amount is equal to or greater than such Investor Fee, the fee shortfall on the Final Valuation Date will be zero.

Because the Investor Fee reduces your Coupon Payment and may reduce the amount of your return at maturity or upon repurchase, the level of the Index must increase by an amount equal to the percentage of the principal amount represented by the Investor Fee, minus the Coupon Payments, if any, in order for you to receive an aggregate amount over the term of the ETNs equal to at least the principal amount of your investment. If the level of the Index decreases or does not increase sufficiently, you will receive less, and possibly significantly less, than the principal amount of your investment at maturity or upon repurchase by Royal Bank.

For a further description of how your payment at maturity will be calculated, see “—Hypothetical Examples—Hypothetical Examples of the Payment at Maturity” below and “Specific Terms of the ETNs” in this pricing supplement.

Payment Upon Repurchase

We have the right to repurchase the ETNs, in whole and not in part, on any Repurchase Date that is a Business Day on or after January 29, 2015 to and including July 18, 2034. To repurchase the ETNs, we will deliver an irrevocable call notice to The Depository Trust Company (“DTC”), as holder of the global note. The call notice will include, among other items, the dates of the Call Measurement Period and the last Business Day on which a holder may submit its offer to repurchase. Once we issue a call notice to repurchase the ETNs at our option, the last Repurchase Date for a repurchase of the ETNs at your option will be the Business Day prior to the first day of the Call Measurement Period.

At your election you may, subject to certain restrictions, offer your ETNs for repurchase by Royal Bank on any Business Day during the term of the ETNs through the Business Day immediately preceding the last scheduled Valuation Date that is neither the first Valuation Date in the Call Measurement Period or the Final Measurement Period, as applicable, provided that you offer at least \$1,000,000 stated principal amount of ETNs (50,000 ETNs) for repurchase and follow the procedures as described below. To satisfy the minimum repurchase amount, your broker or other financial intermediary may bundle your ETNs for repurchase with those of other investors to reach this minimum amount, although there is no guarantee that they will do so. We or the Calculation Agent, may from time to time reduce, in part or in whole, the minimum repurchase amount. Any such reduction will be applied on a consistent basis for all holders of the ETNs at the time the reduction becomes effective. If the ETNs undergo a split or reverse split, the minimum number of ETNs needed to exercise your right to redeem will be adjusted so that the aggregate stated principal amount of ETNs needed to exercise your right to redeem will remain the same. Any payment on the ETNs is subject to our ability to pay our obligations as they become due.

If you choose to offer your ETNs for repurchase, you will receive a cash payment on the Repurchase Date in an amount equal to the “daily repurchase value,” calculated as a cash payment per \$20 principal amount ETN equal to (a) the product of (i) \$20 and (ii) the Index Factor on the applicable Valuation Date, plus (b) the Coupon Payment determined on the applicable Valuation Date, if any, minus (c) the fee shortfall on such Valuation Date, if any. In no event, however, will the daily repurchase value be less than zero. In addition, you will receive the Coupon Payment with respect to the Coupon Valuation Date immediately preceding the applicable Valuation Date if, on the relevant Valuation Date, the Ex-Date with respect to such Coupon Payment has not yet occurred. For the avoidance of doubt, RBCCM will act as our agent in connection with any repurchases at your option and may charge investors an additional fee of up to 0.125% times the daily repurchase value for each ETN that is repurchased.

If we repurchase the ETNs at our option, you will receive a cash payment equal to the “call settlement value,” calculated as a cash payment per \$20 principal amount ETN equal to (a) the product of (i) \$20 and (ii) the Index Factor as of the last Valuation Date in the Call Measurement Period, plus (b) the Coupon Payment determined on such last Valuation Date, if any, minus (c) the fee shortfall on such last Valuation Date, if any. In no event, however, will the call settlement value be less than zero.

The “Call Measurement Period” will be the five Valuation Dates commencing on the 5th trading day after we deliver an irrevocable call notice to DTC.

The Index Factor on any Valuation Date will equal the Final Index Level on that Valuation Date divided by the Initial Index Level.

The fee shortfall on such Valuation Date will be, if the MLP Distribution Amount is less than the Investor Fee, each determined on such Valuation Date, equal to the absolute value of the difference between such MLP Distribution Amount and such Investor Fee. If such MLP Distribution Amount is equal to or greater than such Investor Fee, the fee shortfall on such Valuation Date will be zero.

Because the Investor Fee reduces your Coupon Payment and may reduce the amount of your return at maturity or upon repurchase, the level of the Index must increase by an amount equal to the percentage of the principal amount represented by the Investor Fee, minus the Coupon Payments, if any, in order for you to receive an aggregated amount over the term of the ETNs equal to at least the principal amount of your investment. If the level of the Index decreases or does not increase sufficiently, you will receive less, and possibly significantly less, than the principal amount of your investment at maturity or upon repurchase by Royal Bank.

A Repurchase Date for a repurchase of the ETNs at the option of the holder is the third Business Day following the related Valuation Date. Unless the ETNs have been previously repurchased at our option or the scheduled Repurchase Date is postponed due to a Market Disruption Event, the final day on which Royal Bank will repurchase your ETNs at your option will be July 12, 2034. As such, we anticipate that you must offer your ETNs for repurchase no later than July 6, 2034. Once we issue a call notice to repurchase the ETNs at our option, the last Valuation Date for a repurchase of the ETNs at your option will be the Trading Day prior to the first day of the Call Measurement Period. A Repurchase Date for a repurchase of the ETNs at our option will be the third Trading Day following the last Valuation Date in the Call Measurement Period.

How will the ETNs be issued?

The denomination and stated principal amount of each ETN is \$20. Any future issuances of ETNs may be issued at a price higher or lower than the stated principal amount, based on the indicative value of the ETNs at that time. You will not have the right to receive physical certificates evidencing your ownership except under limited circumstances. Instead, we

will issue the ETNs in the form of a global note, which will be held by DTC or its nominee. Direct and indirect participants in DTC will record beneficial ownership of the ETNs by individual investors. Accountholders in the Euroclear System (“Euroclear”) or Clearstream Banking *société anonyme*, Luxembourg (“Clearstream”) clearance systems may hold beneficial interests in the ETNs through the accounts those systems maintain with DTC. You should refer to the section “Description of Notes—Book-Entry, Delivery and Form” in the accompanying prospectus supplement and the section “Description of Debt Securities—Book-Entry System” in the accompanying prospectus.

Will I receive fixed periodic interest on the ETNs?

No. We will not make any fixed periodic payments of interest during the term of the ETNs. However, you may receive quarterly Coupon Payments as described in this pricing supplement. Unless the ETNs are repurchased by Royal Bank, you will not receive any other payments on the ETNs prior to their maturity.

How do you sell your ETNs?

The ETNs are listed on NYSE Arca under the symbol “YGRO”. As long as an active secondary market in the ETNs exists, we expect that investors will purchase and sell the ETNs primarily in this secondary market. In addition, Royal Bank may repurchase your ETNs as described herein.

The trading price of the ETNs at any time is the price you may be able to sell your ETNs in the secondary market at such time. The trading price of the ETNs at any time may vary significantly from the closing indicative value and intraday indicative value of the ETNs at such time. Paying a premium purchase price over the indicative value of the ETNs could lead to significant losses in the event that you sell your ETNs at a time when such premium is no longer present in the market place or your ETNs are repurchased by us (including at our option on or after January 29, 2015 to and including July 18, 2034, in which case investors will receive a cash payment equal to the call settlement value).

How do you offer your ETNs for repurchase by Royal Bank?

If you wish to offer your ETNs to Royal Bank for repurchase, you and your broker must follow the following procedures:

- your broker must deliver a completed irrevocable Offer for Repurchase, a form of which is attached as Annex A to this pricing supplement, to Royal Bank by 4:00 p.m., New York City time, on the Business Day immediately preceding the Valuation Date applicable to the Repurchase Date. One portion of the Offer for Repurchase must be completed by you as beneficial owner of the ETNs and the other portion must be completed by your broker. You must offer \$1,000,000 stated principal amount or more of your ETNs (50,000 ETNs) for repurchase by Royal Bank on any Repurchase Date. To satisfy the minimum repurchase amount, your broker or other financial intermediary may bundle your ETNs for repurchase with those of other investors to reach this minimum amount, although there is no guarantee that they will do so. We or RBCCM as the Calculation Agent may from time to time reduce, in part or in whole, the minimum repurchase amount. Any such reduction will be applied on a consistent basis for all holders of the ETNs at the time the reduction becomes effective. Royal Bank must acknowledge receipt from your broker in order for your offer to be effective. If the ETNs undergo a split or reverse split, the minimum number of ETNs needed to exercise your right to redeem will be adjusted so that the aggregate stated principal amount of ETNs needed to exercise your right to redeem will remain the same;
- your broker must book a delivery vs. payment trade with respect to your ETNs on the applicable Valuation Date at a price equal to the applicable daily repurchase value, facing Royal Bank; and
- your broker must cause your DTC custodian to deliver the trade as booked for settlement via DTC at or prior to 10:00 a.m., New York City time, on the applicable Repurchase Date (the third Business Day following the Valuation Date).

Different brokers and DTC participants may have different deadlines for accepting instructions from their customers. Accordingly, you should consult the brokerage firm or other DTC participant through which you own your interest in the ETNs in respect of such deadlines. If Royal Bank does not receive your offer for repurchase by 10:00 a.m., New York City time, on the Business Day immediately preceding the applicable Valuation Date, your notice will not be effective and we will not accept your offer to repurchase your ETNs on the applicable Repurchase Date. Any repurchase instructions that we receive in accordance with the procedures described above will be irrevocable.

What are some of the risks of the ETNs?

An investment in the ETNs involves risks. Some of these risks are summarized here, but we urge you to read the more detailed explanation of risks in “Risk Factors” in this pricing supplement.

- **Uncertain Principal Repayment**—You may receive less than the principal amount of your ETNs at maturity or upon repurchase. If the level of the Index decreases, or does not increase, by an amount equal to the percentage of the principal amount represented by the Investor Fee, you will receive less, and possibly significantly less, than your original investment in the ETNs.
- **No Fixed Interest Payments**—You will not receive any fixed periodic interest payments on the ETNs, and your quarterly Coupon Payments are uncertain and could be zero.
- **A Trading Market for the ETNs May Not Continue Over the Term of the ETNs**—The ETNs are listed on NYSE Arca under the symbol “YGRO”. However, a trading market for your ETNs may not continue for the term of the ETNs. We are not required to maintain any listing of the ETNs on NYSE Arca or any other exchange or quotation system and may delist the ETNs at any time.
- **The Intraday Indicative Value and the Closing Indicative Value are Not the Same as the Closing Price or Any Other Trading Price of the ETNs in the Secondary Market**—The closing indicative value will be published on each Index Business Day under the Bloomberg L.P. (“Bloomberg”) ticker symbol “YGROIV”. The intraday indicative value of the ETNs is based on the most recent intraday level of the Index and will be calculated and published every 15 seconds on each Trading Day during normal trading hours under the Bloomberg ticker symbol “YGROIV” and will be disseminated over the consolidated tape, or other major market vendor. The intraday indicative value and the closing indicative value are not the same as the intraday trading or closing price, respectively, of the ETNs on the NYSE. The trading price of the ETNs at any time is the price at which you may be able to sell your ETNs in the secondary market at such time, if one exists. The trading price of the ETNs at any time may vary significantly from their closing indicative value and intraday indicative value at such time.
- **Credit Risk of the Issuer**—Any payments you are entitled to receive on your ETNs are subject to the ability of Royal Bank to pay its obligations as they come due.
- **Owning the ETNs is Not the Same as Owning Any of the Index Constituents**—The return on the ETNs may not reflect the return you would realize if you actually owned any of the Index Constituents included in the Index.
- **Restrictions on Repurchases by Royal Bank**—You must offer the applicable minimum repurchase amount to Royal Bank for your offer for repurchase to be considered, unless we determine otherwise or your broker or other financial intermediary bundles your ETNs for repurchase with those of other investors to reach this minimum repurchase requirement.
- **Your Offer for Repurchase Is Irrevocable**—You will not be able to rescind your offer for repurchase after it is received by Royal Bank. You will be exposed to market risk in the event market conditions change after Royal Bank receives your offer.
- **Tax Consequences are Uncertain and May Be Less Favorable Than a Direct Investment in the Constituent MLPs**—No ruling is being requested from the Internal Revenue Service (“IRS”) with respect to the tax treatment of the ETNs. There is no direct authority dealing with securities such as the ETNs, and there can be no assurance that the IRS will accept, or that a court will uphold, the tax treatment described in this pricing supplement. In addition, you should note that the IRS and the U.S. Treasury Department have announced a review of the tax treatment of an instrument similar to the ETNs. Accordingly, no assurance can be given that future tax legislation, regulations or other guidance may not change the tax treatment of the ETNs. Potential investors should consult their tax advisors regarding the U.S. federal income tax consequences of an investment in the ETNs, including possible alternative treatments. In addition, investment in the ETNs may have timing and character consequences that result in you owing more U.S. federal income tax than you would have owed if you had instead made a direct investment in the Constituent MLPs. In particular, the terms of the ETNs will require you to treat the coupon amount as ordinary income, notwithstanding the fact that an actual

holder of the Constituent MLPs may be allocated an amount of income that is less than the distributions it receives, and all or a portion of such allocations may be treated as long-term capital gain. This could have the effect of requiring you to pay more U.S. federal income tax (and requiring you to pay such tax at an earlier time) than a holder of a similar investment in the Constituent MLPs.

- **Call Feature**—Your ETNs may be repurchased on or after January 29, 2015 at our option. In the event that we call the ETNs, the daily repurchase value may be significantly less than the stated principal amount of the ETNs or the price at which you purchased your ETNs.

Is this the right investment for you?

The ETNs may be a suitable investment for you if:

- You seek an investment with a return linked to the performance of the Index and Coupon Payments which are dependent on the distributions on the Index Constituents.
- You believe the level of the Index will increase by a percentage sufficient to provide you with a satisfactory return on your investment during the term of the ETNs.
- You are willing to accept the risk of fluctuations in the level of the Index.
- You understand that the trading price of the ETNs at any time may vary significantly from the intraday indicative value and the closing indicative value of the ETNs at such time.
- You understand that paying a premium purchase price over the indicative value of the ETNs could lead to significant losses in the event you sell the ETNs at a time when such premium is no longer present in the market place.
- You are willing to be exposed to the risk that we may call the ETNs prior to maturity, and that the amount paid to you upon our exercise of the call feature may be significantly less than the stated principal amount of the ETNs or the price at which you purchased the ETNs.
- You are willing to receive a lower amount of distributions than you would if you owned interests in the Index Constituents directly.
- You are comfortable with the creditworthiness of Royal Bank, as issuer of the ETNs.

The ETNs may not be a suitable investment for you if:

- You are not willing to be exposed to fluctuations in the level of the Index or the amount of distributions on the Index Constituents.
- You seek a guaranteed return of principal.
- You believe the level of the Index will decrease or will not increase by a percentage sufficient to provide you with a satisfactory return on your investment during the term of the ETNs.
- You prefer the lower risk and therefore accept the potentially lower returns of conventional debt securities with comparable maturities and credit ratings.
- You are not willing to be exposed to the trading price of the ETNs which, at any time, may vary significantly from the intraday indicative value and the closing indicative value.
- You are not willing to be exposed to the risk that we may call the ETNs prior to maturity, and that the amount paid to you upon our exercise of the call feature may be significantly less than the stated principal amount of the ETNs or the price at which you purchased the ETNs.
- You are not comfortable with the creditworthiness of Royal Bank, as issuer of the ETNs.

Does an investment in the ETNs entitle you to any ownership interests in the Index Constituents?

No. An investment in the ETNs does not entitle you to any ownership interest or rights in the Index Constituents. You will not have any voting rights with respect to any Index Constituents, receive distributions or have any other interest or rights in any Index Constituents as a result of your ownership of the ETNs.

Will the ETNs be distributed by affiliates of Royal Bank?

Our affiliate, RBCCM, a member of FINRA, will participate in the initial distribution of the ETNs on the initial settlement date and will likely participate in any future distribution of the ETNs. RBCCM is expected to charge normal commissions for the purchase of any ETNs and may also receive all or a portion of the Investor Fee. In addition, RBCCM may charge investors an additional fee of up to 0.125% times the daily repurchase value for each ETN that is repurchased at the investor's option.

Conflicts of Interest

Any offering in which RBCCM participates will be conducted in compliance with the requirements of FINRA Rule 5121 of FINRA regarding a FINRA member firm's distribution of the securities of an affiliate and related conflicts of interest. In accordance with FINRA Rule 5121, RBCCM may not make sales in offerings of the ETNs to any of its discretionary accounts without the prior written approval of the customer. Please see the section entitled "Supplemental Plan of Distribution (Conflicts of Interest)" in this pricing supplement.

What are the U.S. federal income tax consequences of investing in the ETNs?

Please refer to "Material United States Federal Income Tax Considerations" herein for a discussion of material U.S. federal income tax considerations for making an investment in the ETNs.

How has the Index performed historically?

Hypothetical and actual historical values of the Index as well as distributions on the Index Constituents are provided in the section "The Index—Hypothetical Historical and Actual Historical Data on the Index" in this pricing supplement. Past performance is based upon a certain set of data, estimates and assumptions, and is not necessarily indicative of how the Index would have performed under a different set of parameters or how the Index will perform in the future.

Hypothetical Examples

RBCCM will serve as the Calculation Agent for the ETNs (the “Calculation Agent”). The following hypothetical examples detail the steps that the Calculation Agent will take to calculate the Coupon Payments and the payment on the ETNs at maturity.

Hypothetical Coupon Payment Calculation

The following table shows the calculation of the hypothetical Coupon Payment on each quarterly Coupon Payment Date over a hypothetical period of five quarters. The hypothetical Coupon Payments set forth below are for illustrative purposes only and may not be the actual Coupon Payments with respect to any Coupon Payment Date. The actual Coupon Payment on any Coupon Payment Date will be determined by reference to the MLP Distribution Amount and the Investor Fee (including any fee shortfall), each calculated as of the corresponding Coupon Valuation Date, and may be substantially different from any amounts set forth below. The figures in the table below have been rounded for convenience. Given the indicated assumptions, a holder on the applicable Record Date will receive a Coupon Payment as indicated in column G, according to the indicated formula.

| <u>Annual Investor Fee</u> | | | <u>Hypothetical Days in Each Coupon Period</u> | | <u>Principal</u> | <u>Initial Index Level</u> | |
|----------------------------|-------------|---------------------------|--|--|--|----------------------------|---|
| 0.90% | | | 90 | | \$20.00 | 100 | |
| A | B | C | D | E | F | G | H |
| Quarter | Index Level | Index Factor | MLP Distribution Amount as of the Applicable Coupon Valuation Date | Investor Fee (excluding Fee Shortfall From Previous Coupon Valuation Date) | Investor Fee (including Fee Shortfall From Previous Coupon Valuation Date) | Coupon Payment | Fee Shortfall for the Following Coupon Valuation Date |
| | | $B/Initial\ Index\ Level$ | | $0.90\% * (90/365) * \$20 * C$ | | | |
| 1 | 105 | 1.05 | \$0.30 | \$0.05 | \$0.05 | \$0.25 | \$ - |
| 2 | 110 | 1.10 | \$0.35 | \$0.05 | \$0.05 | \$0.30 | \$ - |
| 3 | 115 | 1.15 | \$0.01 | \$0.05 | \$0.05 | \$- | \$ 0.04 |
| 4 | 110 | 1.10 | \$0.02 | \$0.05 | \$0.09 | \$- | \$ 0.07 |
| 5 | 115 | 1.15 | \$0.35 | \$0.05 | \$0.12 | \$0.23 | \$ - |

Hypothetical Examples of the Payment at Maturity

The following examples show how the ETNs would perform in hypothetical circumstances. We have included two examples in which the Index has increased by approximately 400% at maturity, as well as two examples in which the Index has decreased by approximately 50% at maturity. For ease of analysis and presentation, **the following examples assume that the term of the ETNs is 10 quarters, no Coupon Payment was paid during the term of the ETNs and the MLP Distribution Amount for each Coupon Period is zero.** These examples highlight the behavior of the indicative value in different circumstances. For further information on the indicative value, see “Description of the ETNs—Indicative Value” below. The figures presented in these examples have been rounded for convenience. Figures for hypothetical quarter 10 are as of the Final Valuation Date, and, given the indicated assumptions, a holder will receive a payment at maturity as indicated in column F, according to the indicated formula. Although your payment upon repurchase will be calculated in the same manner as the payment at maturity examples described below, you should be aware that RBCCM, our agent for any repurchases at your option, may charge a fee of up to 0.125% times the daily repurchase value for each ETN repurchased. Any payment you will be entitled to receive is subject to our ability to pay our obligations as they become due.

The figures set forth in the examples below are for purposes of illustration only (including for periods of time that will have elapsed after the Initial Trade Date for the ETNs) and are not actual historical results. For information relating to the historical performance of the Index, please refer to “The Index” in this pricing supplement.

Example 1. This example assumes that the Index has increased by approximately 400%.

| | <u>Annual Investor Fee</u> 0.90% | | <u>Hypothetical Days in Each Coupon Period</u> 90 | <u>Principal</u> \$20.00 | <u>Initial Index Level</u> 100 |
|---------|-------------------------------------|--------------------------------|---|---|---------------------------------------|
| A | B | C | D | E | F |
| Quarter | Index Level | Index Factor | Investor Fee (excluding Fee Shortfall From Previous Coupon Valuation Date) | Accrued Investor Fee | Indicative Value |
| | | $B/\text{Initial Index Level}$ | $0.90\% * (90/365) * \$20 * C$ | $\text{Cumulative total of } D^\dagger$ | $\text{Principal} * C - E$ |
| 1 | 105 | 1.05 | \$0.05 | \$0.05 | \$20.95 |
| 2 | 110 | 1.10 | \$0.05 | \$0.10 | \$21.90 |
| 3 | 90 | 0.90 | \$0.04 | \$0.14 | \$17.86 |
| 4 | 115 | 1.15 | \$0.05 | \$0.19 | \$22.81 |
| 5 | 125 | 1.25 | \$0.06 | \$0.24 | \$24.76 |
| 6 | 150 | 1.50 | \$0.07 | \$0.31 | \$29.69 |
| 7 | 200 | 2.00 | \$0.09 | \$0.40 | \$39.60 |
| 8 | 300 | 3.00 | \$0.13 | \$0.53 | \$59.47 |
| 9 | 400 | 4.00 | \$0.18 | \$0.71 | \$79.29 |
| 10 | 500 ^{††} | 5.00 | \$0.22 | \$0.93 | \$99.07 |

[†] Because we have assumed that the MLP Distribution Amount with respect to each Coupon Valuation Date is zero, the Investor Fee for each quarter is increased by the fee shortfall, which is the sum of the Investor Fees (excluding any fee shortfalls) for the previous quarter.

^{††} Corresponds to the Final Index Level.

Example 2. This example assumes that the Index has increased by approximately 400%, but at a different rate of increase than in Example 1.

| | <u>Annual Investor Fee</u> | | <u>Hypothetical Days in Each Coupon Period</u> | <u>Principal</u> | <u>Initial Index Level</u> |
|----------------|----------------------------|---------------------|---|--|----------------------------|
| | 0.90% | | 90 | \$20.00 | 100 |
| A | B | C | D | E | F |
| | | | Investor Fee (excluding Fee Shortfall From Previous Coupon Valuation Date) | Accrued Investor Fee | Indicative Value |
| Quarter | Index Level | Index Factor | <i>0.90%* (90/365)* \$20*C</i> | <i>Cumulative total of D[†]</i> | <i>Principal*C-E</i> |
| 1 | 150 | 1.50 | \$0.07 | \$0.07 | \$29.93 |
| 2 | 200 | 2.00 | \$0.09 | \$0.16 | \$39.84 |
| 3 | 250 | 2.50 | \$0.11 | \$0.27 | \$49.73 |
| 4 | 350 | 3.50 | \$0.16 | \$0.42 | \$69.58 |
| 5 | 400 | 4.00 | \$0.18 | \$0.60 | \$79.40 |
| 6 | 425 | 4.25 | \$0.19 | \$0.79 | \$84.21 |
| 7 | 450 | 4.50 | \$0.20 | \$0.99 | \$89.01 |
| 8 | 475 | 4.75 | \$0.21 | \$1.20 | \$93.80 |
| 9 | 500 | 5.00 | \$0.22 | \$1.42 | \$98.58 |
| 10 | 500 ^{††} | 5.00 | \$0.22 | \$1.64 | \$98.36 |

[†] Because we have assumed that the MLP Distribution Amount with respect to each Coupon Valuation Date is zero, the Investor Fee for each quarter is increased by the fee shortfall, which is the sum of the Investor Fees (excluding any fee shortfalls) for the previous quarter.

^{††} Corresponds to the Final Index Level.

Example 3. This example assumes that the Index has decreased by approximately 50%.

| | <u>Annual Investor Fee</u> | | <u>Hypothetical Days in Each Coupon Period</u> | <u>Principal</u> | <u>Initial Index Level</u> |
|---------|----------------------------|--------------|--|--|----------------------------|
| | 0.90% | | 90 | \$20.00 | 100 |
| A | B | C | D | E | F |
| Quarter | Index Level | Index Factor | Investor Fee (excluding Fee Shortfall From Previous Coupon Valuation Date) | Accrued Investor Fee | Indicative Value |
| | | | $0.90\% * (90/365) * \$20 * C$ | <i>Cumulative total of D[†]</i> | <i>Principal * C - E</i> |
| 1 | 90 | 0.90 | \$0.04 | \$0.04 | \$17.96 |
| 2 | 70 | 0.70 | \$0.03 | \$0.07 | \$13.93 |
| 3 | 65 | 0.65 | \$0.03 | \$0.10 | \$12.90 |
| 4 | 60 | 0.60 | \$0.03 | \$0.13 | \$11.87 |
| 5 | 55 | 0.55 | \$0.02 | \$0.15 | \$10.85 |
| 6 | 54 | 0.54 | \$0.02 | \$0.17 | \$10.63 |
| 7 | 53 | 0.53 | \$0.02 | \$0.20 | \$10.40 |
| 8 | 52 | 0.52 | \$0.02 | \$0.22 | \$10.18 |
| 9 | 51 | 0.51 | \$0.02 | \$0.24 | \$9.96 |
| 10 | 50 ^{††} | 0.50 | \$0.02 | \$0.27 | \$9.73 |

[†] Because we have assumed that the MLP Distribution Amount with respect to each Coupon Valuation Date is zero, the Investor Fee for each quarter is increased by the fee shortfall, which is the sum of the Investor Fees (excluding any fee shortfalls) for the previous quarter.

^{††} Corresponds to the Final Index Level.

Example 4. This example assumes that the Index has decreased by approximately 50%, but at a different rate of decrease than in Example 3.

| | <u>Annual Investor Fee</u> | | <u>Hypothetical Days in Each Coupon Period</u> | <u>Principal</u> | <u>Initial Index Level</u> |
|----------------|----------------------------|---------------------|---|--|----------------------------|
| | 0.90% | | 90 | \$20.00 | 100 |
| A | B | C | D | E | F |
| | | | Investor Fee (excluding Fee Shortfall From Previous Coupon Valuation Date) | Accrued Investor Fee | Indicative Value |
| Quarter | Index Level | Index Factor | $0.90\% * (90/365) * C$ | <i>Cumulative total of D[†]</i> | <i>Principal * C - E</i> |
| 1 | 110 | 1.10 | \$0.05 | \$0.05 | \$21.95 |
| 2 | 120 | 1.20 | \$0.05 | \$0.10 | \$23.90 |
| 3 | 110 | 1.10 | \$0.05 | \$0.15 | \$21.85 |
| 4 | 100 | 1.00 | \$0.04 | \$0.20 | \$19.80 |
| 5 | 90 | 0.90 | \$0.04 | \$0.24 | \$17.76 |
| 6 | 80 | 0.80 | \$0.04 | \$0.27 | \$15.73 |
| 7 | 70 | 0.70 | \$0.03 | \$0.30 | \$13.70 |
| 8 | 60 | 0.60 | \$0.03 | \$0.33 | \$11.67 |
| 9 | 55 | 0.55 | \$0.02 | \$0.35 | \$10.65 |
| 10 | 50 ^{††} | 0.50 | \$0.02 | \$0.38 | \$9.62 |

[†] Because we have assumed that the MLP Distribution Amount with respect to each Coupon Valuation Date is zero, the Investor Fee for each quarter is increased by the fee shortfall, which is the sum of the Investor Fees (excluding any fee shortfalls) for the previous quarter.

^{††} Corresponds to the Final Index Level.

RISK FACTORS

The ETNs are senior unsecured debt obligations of Royal Bank of Canada. The ETNs are Senior Medium-Term Notes, Series F, as described in the accompanying prospectus supplement and prospectus and are riskier than ordinary unsecured debt securities. The return on the ETNs is linked to the performance of the Index. Investing in the ETNs is not equivalent to investing directly in the Index Constituents. See “The Index” for more information.

This section describes the most significant risks relating to an investment in the ETNs. **We urge you to read the following information about these risks, together with the other information in this pricing supplement and the accompanying prospectus supplement and prospectus before investing in the ETNs.**

Risks relating to the ETNs generally

The ETNs do not have a minimum redemption or repurchase amount and you may lose all or a significant portion of your investment in the ETNs

The ETNs do not have a minimum repurchase amount and you may receive less, and possibly significantly less, at maturity or upon repurchase than the amount you originally invested. Our cash payment on your ETNs at maturity or upon repurchase will be based primarily on any increase or decrease in the level of the Index. You may lose all or a significant amount of your investment in the ETNs if the level of the Index decreases substantially. Any payment you will be entitled to receive is subject to our ability to pay our obligations as they become due.

Even if the level of the Index at maturity or upon repurchase by Royal Bank exceeds the Initial Index Level, you may receive less than the principal amount of your ETNs

Because the Investor Fee reduces the Coupon Payment and may reduce the amount of your return at maturity or upon repurchase, the level of the Index must increase by an amount equal to the percentage of the principal amount represented by the Investor Fee, minus the Coupon Payments, in order for you to receive an aggregated amount over the term of the ETNs equal to at least the principal amount of your investment. If the level of the Index decreases or does not increase sufficiently, you will receive less, and possibly significantly less, than the principal amount of your investment at maturity or upon repurchase of your ETNs by Royal Bank. You should also be aware that the deduction of the Investor Fee from the Coupon Payment on a quarterly basis could result in the aggregate Investor Fee being greater than it would have otherwise been if the deduction of Investor Fee was made only at maturity or upon repurchase.

The ETNs are subject to the credit risk of Royal Bank

Although the return on the ETNs will be based on the performance of the Index, the payment of any amount due on the ETNs, including any payment at maturity, is subject to the credit risk of Royal Bank, and our credit ratings and credit spreads may adversely affect the market value of the ETNs. Investors are dependent on Royal Bank’s ability to pay all amounts due on the ETNs, and therefore investors are subject to our credit risk and to changes in the market’s view of our creditworthiness. Payments on the ETNs, including any repayment of principal, are subject to the creditworthiness of Royal Bank. If Royal Bank were to default on its payment obligations, you may not receive any amounts owed to you under the ETNs and you could lose your entire investment.

The closing level of the Index on the Final Valuation Date or another Valuation Date may be less than the level of the Index on the Maturity Date, on a Repurchase Date, or at other times during the term of the ETNs

The closing level of the Index on the Maturity Date, on a Repurchase Date, or at other times during the term of the ETNs, including dates near the Final Measurement Period or Call Measurement Period, or another Valuation Date, as applicable, could be higher than the levels of the Index during the Final Measurement Period or the Call Measurement Period, or on another Valuation Date. Because the Index Factor is only calculated by reference to the closing level of the Index during the Final Measurement Period or the Call Measurement Period, or on a Valuation Date applicable to a repurchase of the ETNs at the option of a holder, as applicable, the Index Factor may be lower than it would otherwise have been if levels of the Index on other dates were considered. If such other levels were considered in determining the Index Factor, the Index Factor may have been higher, resulting in a greater amount payable on the ETNs at maturity or upon repurchase. This discrepancy could be particularly large if there are significant increases in the level of the Index after the Final Measurement Period or Call Measurement Period, or another Valuation Date, as applicable, if there are significant decreases in the level of the Index around the Final Measurement Period or Call Measurement Period, or another Valuation Date, as applicable, or if there is significant volatility in the level of the Index during the term of the ETNs.

There are restrictions on the minimum number of ETNs you may offer to Royal Bank for repurchase

Royal Bank will repurchase your ETNs at your election only if you are offering at least \$1,000,000 stated principal amount of ETNs (50,000 ETNs) for any single repurchase and you have followed the procedures for repurchase detailed herein. The minimum repurchase amount of \$1,000,000 stated principal amount of ETNs (50,000 ETNs) and the procedures involved in the offer of any repurchase represent substantial restrictions on your ability to cause Royal Bank to repurchase your ETNs. If you own ETNs with an aggregate stated principal amount of less than \$1,000,000, you will not be able to cause Royal Bank to repurchase your ETNs, unless we or RBCCM lower the minimum repurchase amount, which we are not obligated to do. In addition, your offer to Royal Bank to repurchase your ETNs on a Repurchase Date is only valid if Royal Bank receives your offer for repurchase from your broker by no later than 4:00 p.m., New York City time, on the Business Day immediately preceding the Valuation Date applicable to the Repurchase Date. If Royal Bank does not receive your offer for repurchase by 4:00 p.m., New York City time, on the Business Day immediately preceding the applicable Valuation Date, your offer will not be effective and we will not repurchase your ETNs on the applicable Repurchase Date. Also, unless the scheduled Repurchase Date is postponed due to a Market Disruption Event, and if we have not previously delivered an irrevocable call notice to DTC, then the final day on which Royal Bank will repurchase your ETNs will be July 12, 2034. As such, we anticipate that you must offer your ETNs for repurchase no later than July 6, 2034. See “Specific Terms of the ETNs—Repurchase Procedures” for more information.

The daily repurchase feature is intended to induce arbitrageurs to counteract any trading of the ETNs at a premium or discount to their indicative value. There can be no assurance that arbitrageurs will employ the repurchase feature in this manner.

You may not be able to offer your ETNs for repurchase because there may be fewer than 50,000 ETNs outstanding at any time

If the number of ETNs outstanding and not held by our affiliates at any one time is fewer than 50,000, you will not be able to avail yourself of the option to redeem prior to maturity, unless we or RBCCM lower the minimum repurchase amount, which we are not obligated to do. To satisfy the minimum repurchase amount, your broker or other financial intermediary may bundle your ETNs for repurchase with those of other investors to reach this minimum amount, although there is no guarantee that they will do so.

You will not know the daily repurchase value or the call settlement value you will receive at the time an election is made to repurchase your ETNs

You will not know the daily repurchase value you will receive at the time you elect to request that we repurchase your ETNs or the call settlement value at the time that we elect to repurchase your ETNs. You will not know the daily repurchase value until after the applicable Valuation Date, which is the Trading Day immediately following the Business Day on which you deliver the repurchase offer to Royal Bank. You will not know the call settlement value until after the last Valuation Date during the Call Measurement Period. We will pay you the daily repurchase value, if any, on the Repurchase Date, which is the third Business Day following the applicable Valuation Date. These dates may be postponed due to the occurrence of Market Disruption Events. See “Specific Terms of the ETNs—Payment Upon Repurchase.” As a result, you will be exposed to market risk in the event the market fluctuates either between the time you deliver the repurchase offer to Royal Bank and the applicable Valuation Date or between the last Business Day prior to the first Valuation Date of the Call Measurement Period and the last Valuation Date of the Call Measurement Period, and your payment may decrease if the level of the Index decreases.

Royal Bank may repurchase your ETNs at its option

We have the right to repurchase your ETNs, in whole and not in part, on any Business Day during the term of the ETNs on or after January 29, 2015 to and including July 18, 2034. The call settlement value may be less than the stated principal amount of \$20 per ETN, the amount you would receive on your investment at maturity or the amount you would have received if you had elected to have Royal Bank repurchase your ETNs at a time of your choosing. Royal Bank has no obligation to take your interests into account when deciding whether to call the ETNs. If we elect to repurchase the ETNs at our option, you may not be able to reinvest at comparable terms or returns. Our right to call the ETNs may create a conflict of interest between your interests and our interests.

You are not guaranteed a Coupon Payment on any Coupon Valuation Date

Your Coupon Payments, if any, are not fixed and could be zero with respect to each Coupon Payment Date. You will not receive a Coupon Payment with respect to a Coupon Valuation Date if the MLP Distribution Amount on such date is

less than or equal to the Investor Fee on such Coupon Valuation Date. If such MLP Distribution Amount is less than such Investor Fee, the absolute value of the resulting difference between such MLP Distribution Amount and such Investor Fee, the fee shortfall, will be included in the Investor Fee for the next Coupon Valuation Date. This process will be repeated to the extent necessary until the MLP Distribution Amount for a Coupon Valuation Date is greater than the Investor Fee for such Coupon Valuation Date. Any fee shortfall will be deducted from the payment at maturity or upon any repurchase.

You may receive less at maturity than you could have earned on ordinary interest-bearing debt securities with similar maturities, including other of our debt securities, since the payment at maturity is based on the appreciation or depreciation of the Index. Because the payment due at maturity may be less than the amount originally invested in the ETNs, the return on the ETNs (the effective yield to maturity) may be negative. Even if it is positive, the return payable on the ETNs may not be enough to compensate you for any loss in value due to inflation and other factors relating to the value of money over time.

Our hedging activity may affect the value of the Index Constituents and therefore the market value of the ETNs

We expect to hedge our obligations under the ETNs through one or more of our affiliates. This hedging activity will likely involve trading in one or more of the Index Constituents, the Constituent MLPs or in other instruments, such as options, swaps or futures, based upon the Index or one or more of the Index Constituents or the Constituent MLPs. We or our counterparties may also adjust this hedge during the term of the ETNs and may close out or unwind this hedge on or before any applicable Valuation Date, including any Valuation Date during the Final Measurement Period or a Call Measurement Period, which may involve, among other things, us or our counterparties purchasing or selling the Index Components or other instruments such as swaps, options or futures based upon the Index Constituents or the Constituent MLPs. Additionally, this hedging activity during the term of the ETNs, including on any Valuation Date during the Final Measurement Period or a Call Measurement Period, could negatively affect the level of the Index on that Valuation Date and, therefore, adversely affect any payment owed to you under the ETNs. Moreover, this hedging activity may result in us or our affiliates receiving a profit, even if the market value of the ETNs declines.

We may also issue other securities or financial or derivative instruments with returns linked or related to changes in the performance of any of the foregoing. By introducing competing products into the marketplace in this manner, we could adversely affect the market value of the ETNs.

These hedging activities may present a conflict of interest between your interests as a holder of the ETNs and the interests we and/or our counterparties, which may be our affiliates, have in executing, maintaining and adjusting hedging transactions. With respect to any of the activities described above, we have no obligation to take the needs of any buyer, seller or holder of the ETNs into consideration at any time.

Prior to maturity, the market value of the ETNs may be influenced by many unpredictable factors

The market value of your ETNs may fluctuate between the date you purchase them and the applicable Valuation Date. You may also sustain a significant loss if you sell the ETNs in the secondary market. Several factors, many of which are beyond our control, will influence the market value of the ETNs. Factors that may influence the market value of the ETNs include:

- the level of the Index;
- the actual and expected volatility of the Index;
- the time remaining to the maturity of the ETNs;
- supply and demand for the ETNs, including inventory positions with any market maker (the supply and demand for the ETNs may be affected by the amount of ETNs we decide to issue, and we are under no obligation to issue any ETNs to increase the supply);
- economic, financial, political, regulatory or judicial events that affect the level of the Index or the values of the Index Constituents;
- the Investor Fee then applicable to the ETNs, including the amount of the fee shortfall;
- the Constituent MLPs and changes to those Constituent MLPs;

- the market price and expected distributions on the Index Constituents;
- interest and yield rates in the market generally, as well as in the markets of the Constituent MLPs; and
- the actual or perceived creditworthiness of Royal Bank, including actual or anticipated downgrades in Royal Bank's credit ratings.

These factors interrelate in complex ways, and the effect of one factor on the market value of your ETNs may offset or enhance the effect of another factor.

The liquidity of the market for the ETNs may vary materially over time

As stated on the cover of this pricing supplement, we will sell a portion of the ETNs on the initial settlement date, and additional ETNs may be issued and sold from time to time through RBCCM, an affiliate of ours. Also, the number of ETNs outstanding could be reduced at any time due to repurchases of the ETNs by Royal Bank as described in this pricing supplement. Additionally, any ETNs held by us or an affiliate in inventory may be resold at prevailing market prices or lent to market participants who may have made short sales of the ETNs. We are not obligated to sell the full amount of ETNs offered by this pricing supplement, and may discontinue sales of the ETNs at any time. In the event that we discontinue sales of ETNs, the price of the ETNs may be subject to significant distortions. Accordingly, the liquidity of the market for the ETNs could vary materially over the term of the ETNs. While you may elect to offer your ETNs for repurchase by Royal Bank prior to maturity, such repurchase is subject to the restrictive conditions and procedures described elsewhere in this pricing supplement, including the condition that you must offer at least the applicable minimum repurchase amount to Royal Bank at one time for repurchase on any repurchase date.

There may not be an active trading market in the ETNs

The ETNs are listed on NYSE Arca under the symbol "YGRO". However, a trading market for your ETNs may not continue for the term of the ETNs. In addition, no assurances can be given as to the continuation of the listing during the term of the ETNs. We are not required to maintain any listing of the ETNs on NYSE Arca or any other exchange or quotation system.

The intraday indicative value and the closing indicative value are not the same as the closing price or any other trading price of the ETNs in the secondary market

The intraday indicative value of the ETNs will be calculated and published every 15 seconds on each Index Business Day during normal business hours under the Bloomberg ticker symbol "YGROIV" so long as no Market Disruption Event has occurred or is continuing and will be disseminated over the Consolidated Tape, or other major market data vendor. The intraday indicative value of the ETNs at any time is based on the most recent intraday level of the Index. At any time at which a Market Disruption Event has occurred and is continuing, there shall be no intraday indicative value. See "Description of the ETNs—Indicative Value" in this pricing supplement. The Calculation Agent or its affiliate is responsible for computing and disseminating the intraday indicative value. Neither the intraday indicative value nor the closing indicative value of the ETNs is necessarily the same as the trading price of the ETNs in the secondary market at such time. The closing indicative value for each trading day will be published on such trading day under the Bloomberg ticker symbol "YGROIV."

The trading price of the ETNs at any time is the price at which you may be able to sell your ETNs in the secondary market at such time, if one exists. The trading price of the ETNs at any time may vary significantly from their intraday indicative value and the closing indicative value of the ETNs at such time. Paying a premium purchase price over the indicative value of the ETNs could lead to significant losses in the event the investor sells the ETNs at a time when such premium is no longer present in the marketplace or the ETNs are repurchased by us (including at our option), in which case investors will receive a cash payment equal to the daily repurchase value, as described herein.

We may, without providing you notice or obtaining your consent, create and issue ETNs in addition to those offered by this pricing supplement having the same terms and conditions as the ETNs. However, we are under no obligation to sell additional ETNs at any time, and we may suspend issuance of new ETNs at any time without providing you notice or obtaining your consent. If we stop selling additional ETNs, the price and liquidity of the ETNs could be materially and adversely affected, including an increase in the premium purchase price of the ETNs over the intraday indicative value of the ETNs. Before trading in the secondary market, you should compare the closing indicative value and intraday indicative value with the then-prevailing trading price of the ETNs.

The ETNs may not be a suitable investment for you

The ETNs may not be a suitable investment for you if you are not willing to be exposed to fluctuations in the level of the Index; you seek a guaranteed return of principal; you believe the level of the Index will decrease or will not increase by an amount equal to the percentage of the principal amount represented by the Investor Fee, minus the Coupon Payments, during the term of the ETNs; you prefer the lower risk and therefore accept the potentially lower but more predictable returns of conventional debt securities with comparable maturities and credit ratings; or you are not willing to be exposed to the trading price of the ETNs which, at any time, may vary significantly from the intraday indicative value and the closing indicative value.

We may stop issuing or selling the ETNs at any time, including if we determine that we have reached a maximum issuance amount, which may cause the ETNs to trade at a significant premium, which could be reduced or eliminated at any time

We have no obligation to issue or sell additional ETNs at any time and may limit or restrict such sales or stop issuing or selling for any reason at any time, including if at our own discretion, we determine that we have reached a maximum issuance amount. See “Specific Terms of the ETNs—Further Issuances.” If we discontinue issuing and selling additional ETNs, an imbalance between supply and demand for the ETNs may arise, which could give rise to distortions in the market for the ETNs and result in the ETNs trading at a significant premium. These distortions could lead to the market price of the ETNs differing, perhaps significantly, from the intraday indicative value and closing indicative value of the ETNs. If this circumstance occurs, the ETNs could become highly volatile and subject to rapid and significant decreases in price with a reduction or elimination of premium at any time, independently of the performance of the Index, resulting in significant loss for any investors that had paid such premium. If we do choose to sell additional ETNs, we may do so at a price that is higher or lower than the stated principal amount, based on the closing indicative value of the ETNs at that time. The price of the ETNs in any subsequent sale may differ substantially from the issue price paid in connection with any other issuance of the ETNs.

We or our affiliates may have economic interests adverse to those of the holders of the ETNs

Because our affiliate, RBCCM, is initially acting as the Calculation Agent for the ETNs, potential conflicts of interest may exist between it and you, including with respect to certain determinations and judgments that it must make in determining amounts due to you, either at maturity or upon repurchase of the ETNs. You should also be aware that RBCCM, will act as our agent in connection with the distribution of the ETNs and will charge normal commissions for the purchase of the ETNs and will also receive all or a portion of the Investor Fee.

In addition, we and other affiliates of ours expect to engage in trading activities related to one or more Index Constituents or Constituent MLPs, futures or options on one or more Index Constituents, Constituent MLPs or the Index itself, or other derivative instruments with returns linked to the performance of one or more Index Constituents, Constituent MLPs or the Index itself, for their accounts and for other accounts under their management. We and these affiliates may also issue or underwrite or assist unaffiliated entities in the issuance or underwriting of other securities or financial instruments linked or related to the performance of the Index or one or more Index Constituents or Constituent MLPs. By introducing competing products into the marketplace in this manner, we or one or more of our affiliates could adversely affect the value of the ETNs. To the extent that we or one of our affiliates serves as issuer, agent or underwriter for such securities or financial instruments, our or their interests with respect to such products may be adverse to those of the holders of the ETNs. Any of these trading activities could potentially affect the level of the Index and, accordingly, could affect the value of the ETNs and the amount payable to you at maturity or upon repurchase, as applicable.

We or our affiliates may currently or from time to time engage in business with one or more Constituent MLPs, including extending loans to, making equity investments in, or providing advisory services to, them, including merger and acquisition advisory services. In the course of this business, we or our affiliates may acquire non-public information about one or more Constituent MLPs, and we will not disclose any such information to you. In addition, we or one or more of our affiliates may publish research reports or otherwise express views or provide recommendations about any Index Constituent, Constituent MLP or the Index. Any such views or recommendations may be inconsistent with purchasing or holding the ETNs. Any prospective purchaser of ETNs should undertake such independent investigation of the Index and each Index Constituent and Constituent MLP as in its judgment is appropriate to make an informed decision with respect to an investment in the ETNs.

In our sole discretion, we may decide to issue and sell additional ETNs from time to time at a price that is higher or lower than the stated principal amount, based on the indicative value of the ETNs at that time, and any ETNs held by us or an affiliate in inventory may be resold at prevailing market prices or lent to market participants who may have made short sales

of the ETNs. See “— The liquidity of the market for the ETNs may vary materially over time” above and “Supplemental Plan of Distribution (Conflicts of Interest).

With respect to any of the activities described above, neither we nor our affiliates have any obligation to take the needs of any buyer, seller or holder of the ETNs into consideration at any time.

If a Market Disruption Event has occurred or is continuing on a Valuation Date, the Calculation Agent will postpone the Valuation Date (and the applicable Maturity Date or a Repurchase Date) and may determine the closing level of the Index applicable to such Valuation Date

The determination of the closing level of the Index on a Valuation Date, including any Valuation Date during the Call Measurement Period or the Final Measurement Period, may be postponed if the Calculation Agent reasonably determines that a Market Disruption Event has occurred or is continuing on such Valuation Date.

If postponement of a Valuation Date with respect to a repurchase at the option of the holder occurs, then such Valuation Date will be postponed to the next Trading Day on which the Calculation Agent determines that no Market Disruption Event occurs or is continuing, unless the Calculation Agent determines that a Market Disruption Event occurs or is continuing on each of the six scheduled Trading Days immediately following such scheduled Valuation Date. In that case, the sixth scheduled Trading Day following the scheduled Valuation Date will be deemed to be the Valuation Date, notwithstanding the existence of a Market Disruption Event.

Similarly, if any of the Valuation Dates in the Final Measurement Period or the Call Measurement Period, as applicable, is postponed due to a Market Disruption Event, such Valuation Date will be postponed to the next Trading Day on which the Calculation Agent determines that no Market Disruption Event occurs or is continuing, unless in respect of such Valuation Date the Calculation Agent determines that a Market Disruption Event occurs or is continuing on each of the three scheduled Trading Days immediately following that scheduled Valuation Date. No Valuation Date in the Final Measurement Period will be postponed to a date later than the originally scheduled Maturity Date or, if the originally scheduled Maturity Date is not a Business Day, later than the first Business Day after the originally scheduled Maturity Date, and no Valuation Date in the Call Measurement Period will be postponed to a date later than the originally scheduled last Valuation Date of the Call Measurement Period or, if such originally scheduled last Valuation Date is not a Business Day, later than the first Business Day after such originally scheduled last Valuation Date. If a Market Disruption Event occurs or is continuing on such last possible Valuation Date or such possible day is not a Trading Day, that day will nevertheless be the last Valuation Date for purposes of calculating the Final Index Level. In such cases, more than one Valuation Date may occur simultaneously on the last possible Valuation Date for purposes of calculating the Final Index Level for the determination of the payment at maturity or the call settlement value.)

If a Valuation Date is postponed to the last possible date as described in the two preceding paragraphs, then the Calculation Agent will determine the closing level for such Valuation Date in accordance with the formula for and method of calculating the Index last in effect prior to the commencement of the Market Disruption Event using exchange traded prices of the Index Constituents on the relevant exchanges (as determined by the Calculation Agent in its sole and absolute discretion) or, if trading in any Index Constituent has been materially suspended or materially limited, its good faith estimate of the prices that would have prevailed on the applicable exchanges (as determined by the Calculation Agent in its sole and absolute discretion) but for the suspension or limitation, as of the Valuation Time (as defined below) on that deemed Valuation Date, of each Index Constituent (subject to the provisions described under “Specific Terms of the ETNs—Discontinuation or Modification of the Index” below).

If a scheduled Valuation Date is postponed due to a Market Disruption Event, the Repurchase Date will also be postponed so that such Repurchase Date occurs on the third Business Day following the Valuation Date as postponed. If the Final Valuation Date is postponed due to a Market Disruption Event, the Maturity Date will also be postponed so that the Maturity Date occurs on the fifth Business Day following the Final Valuation Date as postponed. Any such postponement or determinations by the Calculation Agent may adversely affect your return on the ETNs. In addition, no interest or other payment will be payable as a result of such postponement. See “Specific Terms of the ETNs—Market Disruption Events.”

Significant aspects of the tax treatment of an investment in the ETNs are uncertain

The tax treatment of an investment in the ETNs is uncertain. We do not plan to request a ruling from the Internal Revenue Service or from any Canadian authorities regarding the tax treatment of the ETNs, and the Internal Revenue Service or a court may not agree with the tax treatment described in this pricing supplement.

Since the Index Constituents are the type of financial assets described under Section 1260 of the Internal Revenue Code, while the matter is not entirely clear, there exists a substantial risk that an investment in an ETN is a “constructive ownership transaction” to which Section 1260 of the Internal Revenue Code applies. If Section 1260 of the Internal Revenue Code applies, all or a portion of any long-term capital gain recognized by a holder in respect of an ETN will be recharacterized as ordinary income and certain interest charges may apply. See the section entitled “Material United States Federal Income Tax Considerations—Possible Application of Section 1260 of the Internal Revenue Code” in this pricing supplement.

Although the U.S. federal income tax treatment of the Coupon Payment is uncertain, we intend to take the position that the Coupon Payment constitutes taxable ordinary income to a holder.

The Internal Revenue Service has issued a notice indicating that it and the U.S. Treasury Department are actively considering whether, among other issues, a holder should be required to accrue ordinary income over the term of an instrument similar to the ETNs regardless of whether any payments are made prior to maturity and whether all or part of the gain a holder may recognize upon sale, repurchase or maturity of an instrument similar to the ETNs could be treated as ordinary income. The outcome of this process is uncertain and guidance, if any, could apply on a retroactive basis.

In addition, investment in the ETNs may have timing and character consequences that result in a holder owing more U.S. federal income tax than such holder would have owed if such holder had instead made a direct investment in the Constituent MLPs. In particular, the terms of the ETNs will require a holder to treat the coupon amount as ordinary income, notwithstanding the fact that an actual holder of the Constituent MLPs may be allocated an amount of income that is less than the distributions it receives, and all or a portion of such allocations may be treated as long-term capital gain. This could have the effect of requiring a holder to pay more U.S. federal income tax (and requiring such holder to pay such tax at an earlier time) than a holder of a similar investment in the Constituent MLPs.

Please read carefully the section entitled “Material United States Federal Income Tax Considerations” in this pricing supplement. Holders should consult their tax advisor about their own tax situation.

A 30% U.S. Federal withholding tax will be withheld on coupon payments to Non-U.S. Holders and certain additional adverse U.S. Federal tax consequences may apply to Non-U.S. Holders that acquire the ETNs

While the U.S. federal income tax treatment of the ETNs (including proper characterization of the Coupon Payments for U.S. federal income tax purposes) is uncertain, U.S. federal income tax at a 30% rate (or at a lower rate under an applicable income tax treaty) will be withheld in respect of the Coupon Payments paid to a non-U.S. holder unless such payments are effectively connected with the conduct by the non-U.S. holder of a trade or business in the United States (in which case, to avoid withholding, the non-U.S. holder will be required to provide a Form W-8ECI (or any applicable successor form)). We will not pay any additional amounts in respect of such withholding.

In addition, the ETNs could be treated as “United States real property interests” under Section 897 of the Internal Revenue Code. If the ETNs were so treated, certain adverse U.S. federal income tax consequences may apply to a non-U.S. holder upon the sale, repurchase or maturity of the ETNs (including treatment of any gain recognized in respect of the ETNs as income effectively connected with the conduct of a U.S. trade or business and the imposition of a 10% U.S. withholding tax on gross proceeds).

Risks relating to the Index

There may be significant daily fluctuations in the level of the Index, which will affect the value of the ETNs

The Index is expected to be highly volatile. It is likely that the actual performance of the Index will be highly volatile in the future, with the potential for significant fluctuations in the daily performance of the Index. Accordingly, the ETNs are not designed for investors who are not willing to be exposed to potential significant fluctuations in the level of the Index and, therefore, in the value of their ETNs.

The Index has a limited performance history

The Index was launched on January 8, 2014, and therefore has no performance history prior to that date. Consequently, little or no historical information will be available for you to consider in making an independent investigation of the Index’s performance, which may make it difficult for you to make an informed decision with respect to an investment in the ETNs.

Hypothetical back-tested levels of the Index are limited and should not be taken as an indication of its future performance during the term of the ETNs

It is impossible to predict whether the level of the Index will rise or fall. The actual performance of the Index over the term of the ETNs, as well as the amount of any Coupon Payments you may receive and any amount payable at maturity or upon earlier repurchase, may bear little relation to the hypothetical back-tested levels of the Index. Moreover, because the Index began publishing on January 8, 2014, there is minimal actual historical information for you to consider in making an independent investigation of the Index. The hypothetical back-tested Index performance information that has been calculated by the Index Sponsor and included in this pricing supplement is subject to significant limitations, including the fact that the Index Sponsor had the benefit of hindsight both in developing the Index methodology and in calculating the hypothetical back-tested Index Levels, and the fact that the hypothetical back-tested Index Levels were calculated in a manner that differed from the Index methodology in certain respects, as described in “The Index—Hypothetical Historical and Actual Historical Data on the Index.” If the hypothetical back-tested Index Levels were calculated based on different assumptions or if the modifications to the Index methodology described in that section were not made, or if the hypothetical back-tested levels covered a longer or different time period, the hypothetical back-tested performance of the Index might look materially different.

MLPs are concentrated in the energy industry

The Index is primarily comprised of securities of MLPs that hold energy and energy infrastructure assets in North America. The MLPs are concentrated in the mid-stream energy sector, although the Index is not limited to MLPs in that sector. The mid-stream energy sector involves the gathering, processing, transportation and storage of crude oil and natural gas. Some of the Constituent MLPs may be smaller, non-diversified businesses that are exposed to the risks associated with such businesses, including the lack of capital funding to sustain or grow businesses and potential competition from later, better financed and more diversified businesses. The Constituent MLPs may be significantly affected by a number of factors, including:

- worldwide and domestic supplies of, and demand for, crude oil, natural gas, natural gas liquids, hydrocarbon products and refined products;
- changes in tax or other laws affecting master limited partnerships generally;
- regulatory changes affecting pipeline fees and other regulatory fees in the energy sector;
- changes in the relative prices of competing energy products;
- the impact of environmental laws and regulations and technological changes affecting the cost of producing and processing, and the demand for, energy products;
- decreased supply of hydrocarbon products available to be processed due to fewer discoveries of new hydrocarbon reserves, short- or long-term supply disruptions or otherwise;
- risks of regulatory actions and/or litigation, including as a result of leaks, explosions or other accidents relating to energy products;
- uncertainty or instability resulting from an escalation or additional outbreak of armed hostilities or further acts of terrorism in the United States or elsewhere; and
- general economic and geopolitical conditions in the United States and worldwide.

These or other factors, or the absence of such factors, could cause a downturn in the energy industry generally or regionally and could cause the value of some or all of the Index Constituents to decline during the term of the ETNs.

The Index may not be representative of the North American mid-stream energy infrastructure industry

As of the date of this pricing supplement, a majority of the MLPs are involved in the North American mid-stream energy infrastructure industry. These Constituent MLPs and the Index itself, however, may not be representative of the entire mid-stream energy infrastructure industry generally, which is comprised of more than the 25 Constituent MLPs represented by the Index. If the Index Constituents decline in value, the Index will decline in value even if prices of equity interests in a broader range of companies in the mid-stream energy infrastructure-related industry generally increase in value.

The Index may, at times, lack industry, market capitalization or geographic diversification

The Index methodology does not require diversity in any particular industry, geographic area or market capitalization of any particular company. The Index weights its components solely by liquidity. Consequently, from time to time, the Index may be concentrated in highly liquid MLPs of companies in a particular industry, sector or geographic area (which may be outside of the United States), and also may contain a high percentage of companies with a similar market capitalization. These potential concentrations may have an adverse effect on the level of the Index if, for example, a negative event occurs in a particular industry, segment or geographic area.

The Index comprises MLPs chosen based in part on their recent dividend or distribution yields

The Index Constituents are included in the Index based in large part on their recent dividend or distribution yields, which reflect financial performance from only the recent past and are no guarantee of future performance. The Index Constituents may not be the securities with the highest yields in the market over the term of the ETNs, and thus may not result in relatively higher Coupon Payments, and may result in no coupon payments at all. Furthermore, the Index methodology may not result in the highest yielding Index Constituents being included in the Index. Even if the Index achieves its intended purpose of providing exposure to Constituent MLPs that distribute relatively higher dividends or distributions throughout the term of the ETNs, the payment at maturity or repurchase may be lower than the payment at maturity of securities linked to other indices that are composed of diversified asset classes and may result in a total return that is similar to, or lower than, those other securities.

Our offering of the ETNs does not constitute a recommendation of the Index, the Index Constituents, the Constituent MLPs or MLPs generally

You should not take our offering of the ETNs as an expression of our views about how the Index will perform in the future or as a recommendation to invest in the Index, the Index Constituents, the Constituent MLPs or in MLPs generally, including through an investment in the ETNs. As we are part of a global financial institution, our affiliates may, and often do, have positions (including short positions) that conflict with an investment in the ETNs, including positions in Index Constituents or the Constituent MLPs. You should undertake an independent determination of whether an investment in the ETNs is suitable for you in light of your specific investment objectives, risk tolerance and financial resources.

The Index methodology may not be effective in predicting the future performance of the MLPs it selects.

The Index methodology selects MLPs on a semi-annual basis to be included in the Index based in part on certain observable fundamental factors of publicly traded MLPs, including historical, current and future distribution growth. The Index methodology assumes that historical measures of certain of these factors are accurate predictors of the future performance of, including the price of and distributions on, an Index Constituent. However, there may be no correlation between the fundamental factors used by the Index methodology to select MLPs and the future performance of those MLPs. In fact, the efficient market hypothesis is a well-known theory in academic financial literature that states it is impossible to choose investments that outperform the market, because the market is efficient and current asset prices reflect all available relevant information. As a result, future asset prices will only change from current asset prices as a result of new information. Because it is impossible to predict what new information will become available, it is impossible to predict future asset prices. If true, the efficient market hypothesis implies that the fundamental factors used by the Index methodology should not be accurate predictors of an MLP's future performance. If the efficient market hypothesis is true, the Index may perform no better than a random allocation among all eligible MLPs.

In certain circumstances, the Index Sponsor may use estimates in calculating future distribution growth

Although the selection criteria for the Index Constituents are based on formulae set forth in the Index Methodology, there may be circumstances when the Index Sponsor deviates from the Future Distribution Growth formula in calculating that criterion. See "The Index—Selection of the Index Constituents." For example, if the number of analysts covering a potential Index Constituent decreases below the number from which the Index Sponsor believes that a reliable consensus can be drawn, the Index Sponsor, which is independent of the Bank, will use an in-house estimate when calculating Future Distribution Growth. Creating an in-house estimate would necessarily involve predictive elements. Similarly situated analysts, reviewing the same data, could disagree with the estimated Future Distribution Growth and the resulting inclusion of the Index Constituent. Consequently, this option, with its potential for error, may be reflected in the inclusion of an Index Constituent.

The Index methodology may not effectively apply the factors used to select the Index Constituents.

Because other filters are applied to the potential Index Constituents during the Index Constituent selection process, the effectiveness of applying the fundamental factors as selection criteria may be diminished. For example, because the potential Index Constituents must have daily liquidity of at least \$4 million and have a market capitalization of at least \$750 million on a Selection Day (as defined below), the Index methodology may exclude certain MLPs based on their market capitalization and daily liquidity that would have otherwise been included in the Index based on their distribution growth. You should carefully consider the risks associated with the Index methodology and how those risks could negatively affect the level of the Index and the value of the ETNs.

You will not have any partnership interests or other rights in the Index Constituents

As an owner of the ETNs, you will not have the rights that investors in the securities of the Constituent MLPs have. You will not own or have any beneficial or other legal interest in, and will not be entitled to any rights with respect to, any of the Index Constituents. You will not have any voting rights, any right to receive distributions, if any, made on the Index Constituents or any other rights with respect to the Index Constituents or the Constituent MLPs as a result of your ownership of the ETNs. Your ETNs will be paid in cash, and you will have no right to receive delivery of any of the Index Constituents or any options of futures contracts on the forgoing. None of the Constituent MLPs, the Index Sponsor or the Index Calculation Agent is in any way involved in this offering and has no obligations relating to the ETNs or to the holders of the ETNs.

The Index Constituents are not equally weighted and changes in the values of the Index Constituents may offset each other

Because the Index Constituents are not equally weighted, the same percentage change in two or more Index Constituents will have different effects on the closing level of the Index. For example, because Plains All American Pipeline, L.P. (NYSE: PAA) and Magellan Midstream Partners, L.P. (NYSE: MMP) have the two largest weightings in the Index as of the date of this pricing supplement, any decrease in the value of these Index Constituents will have a significantly greater effect on the closing level of the Index than a comparable percentage increase in the value of lesser weighted Index Constituents. In addition, because the ETNs are linked to an Index which primarily tracks MLPs in a diverse range of energy industry sectors, price movements between the Index Constituents representing different sectors may not correlate with each other. At a time when the value of an Index Constituent representing a particular energy industry sector increases, the value of other Index Constituents representing different sectors may not increase as much or may decline. Therefore, in calculating the closing level of the Index, increases in the values of some of the Index Constituents or asset classes may be moderated, or more than offset, by lesser increases or declines in the values of other Index Constituents.

The Index Sponsor or the Index Calculation Agent may discontinue the publication of the Index

Neither the Index Sponsor nor the Index Calculation Agent is under any obligation to continue to calculate and publish values of the Index, including the intraday values and the end-of-day official closing value. Furthermore, neither is required to publish, or calculate similar values for, any successor index (as defined under “Specific Terms of the ETNs—Discontinuation or Modification of the Index” below). If publication of the Index is discontinued, we may not be able to provide the intraday values of the Index required to maintain any listing of the ETNs on the NYSE Arca. If the ETNs are not approved for listing, or if they are approved and later become delisted, the liquidity of the market for the ETNs may be materially and adversely affected and you may sustain significant losses if you sell your ETNs in the secondary market. In the event that the level of the Index is not available, the Calculation Agent may be required to make a good faith estimate in its reasonable discretion of the level of the Index, which could adversely affect the value of your ETNs or the amount payable on your ETNs at maturity or upon repurchase. The circumstances in which the Calculation Agent will be required to make such a determination are described more fully under “Specific Terms of the ETNs—Market Disruption Events,” “—Discontinuation or Modification of the Index” and “—Role of Calculation Agent.”

You will have no rights against any entities with discretion over the Index

As an owner of the ETNs, you will have no rights against the Index Sponsor or the Index Calculation Agent, even though the amount you receive at maturity or upon repurchase of your ETNs by Royal Bank will depend, in part, on the level of the Index, and such level is based on the prices of the Index Constituents.

We and our affiliates do not have any affiliation with the Index Sponsor and are not responsible for its public disclosure of information

The Index Sponsor is responsible for the Index methodology for determining the composition of the Index and for all matters relating to the policies, maintenance and calculation of the Index. While we and our affiliates may currently or from time to time engage in business with the Index Sponsor and funds they manage, we and our affiliates are not affiliated with Index Sponsor in any way (except for licensing arrangements) and have no ability to control or predict its actions, including any errors in or discontinuance of disclosure regarding their methods or policies relating to the Index. The Index Sponsor is not involved in the offering of the ETNs in any way and has no obligation to consider your interests as an owner of the ETNs in taking any actions relating to the Index that might affect the value of your ETNs. Neither we nor any of our affiliates assumes any responsibility for the adequacy or accuracy of the information contained in any public disclosure of information by the Index Sponsor. You, as an investor in the ETNs, should make your own investigation into the Index.

The policies of the Index Sponsor and any changes thereto that affect the composition and valuation of the Index could affect the amount payable on your ETNs and their market value

The policies of the Index Sponsor concerning additions, deletions or substitutions of the Index Constituents and the manner in which changes affecting the Index are reflected could affect the level of the Index and, therefore, the amount payable on your ETNs at maturity or upon repurchase by Royal Bank and the market value of your ETNs prior to maturity. See “The Index” below for a discussion of these policies.

Additional Index Constituents may satisfy the eligibility criteria for inclusion in the Index, and the current Index Constituents may fail to satisfy such criteria. In addition, the Index Sponsor may at any time supplement, amend, revise or withdraw the Index methodology for determining the composition and weighting of the Index, or for calculating the level of the Index, although any such changes will be in a manner consistent with the Index’s purpose of tracking MLPs listed and traded on a recognized U.S. securities exchange. The Index Sponsor may also discontinue or suspend compilation or publication of the Index; in that event, it may become difficult to determine the level of the Index and therefore the value of, or the amount payable on, your ETNs.

If events such as these occur, or if the level of the Index is not available or cannot be calculated because of a market disruption event or for any other reason, the Calculation Agent may be required to make a good faith estimate in its reasonable discretion of the level of the Index. The circumstances in which the Calculation Agent will be required to make such a determination are described more fully under “Specific Terms of the ETNs—Market Disruption Events,” “—Discontinuation or Modification of the Index” and “—Role of Calculation Agent.”

One or more Index Constituents may be substituted with other Index Constituents under certain circumstances

As further explained in “The Index—Index Adjustments for Extraordinary Events,” one or more of the Index Constituents at any given time may be substituted with other Index Constituents in the event that such Index Constituent is subject to certain extraordinary corporate actions such as mergers, spin-offs or bankruptcy. Such new Index Constituent may perform worse than the Index Constituent that it replaced. In addition, any such new Index Constituent may have risks associated with it that may not be present in the Index Constituent that it replaced.

THE INDEX

Yorkville MLP Distribution Growth Leaders LiquidSM PR Index (the “Index”) is comprised of equity securities of 25 Constituent MLPs that are listed and traded on a recognized U.S. securities exchange. The 25 securities included in the Index are limited partnership interests of master limited partnerships traded on a recognized U.S. securities exchange (each, an “MLP”). The MLPs are chosen for inclusion in the Index according to a proprietary scoring model developed by Yorkville Capital Management LLC (the “Index Sponsor”), which evaluates various financial measures to rank potential MLPs for inclusion in the Index. The Index Sponsor is a registered investment advisory firm serving both individual investors as well as institutional clients.

We refer to the MLPs whose securities are included in the Index as “Constituent MLPs.” The Index methodology for determining the composition, weighting and calculation of the Index was developed by the Index Sponsor and is available at www.solactive.com. The information on that website is not a part of, or incorporated by reference in, this prospectus supplement. Although the Index Sponsor may at any time supplement, amend, revise or withdraw this methodology, any of these changes will be made in a manner consistent with the Index’s purpose of tracking the price movements in shares of selected MLPs which are publicly traded on a recognized U.S. securities exchange. The value of the Index is calculated and published by Solactive AG, or the “Index Calculation Agent.”

All disclosure contained in this pricing supplement regarding the Index, including, without limitation, its make-up, performance and method of calculation has been derived from publicly available information prepared by the Index Sponsor. We have not independently verified the accuracy, completeness, or adequacy, of such information. We are not responsible for the calculation, maintenance or publication of the Index.

You, as an investor in the ETNs, should make your own investigation into the Index, the Index Sponsor and the Index Calculation Agent. The Index Sponsor and the Index Calculation Agent are not involved in the offer of the ETNs in any way and have no obligation to consider your interests as a holder of the ETNs. The Index Sponsor and the Index Calculation Agent have no obligation to continue to publish the Index, and may discontinue or suspend publication of the Index at any time in their sole discretion.

The Index Sponsor maintains a database of all MLPs listed and traded on a recognized U.S. securities exchange. These MLPs comprise the Yorkville MLP Universe Index. In the case of a new MLP listing as a result of an initial public offering, spinoff or corporate conversion to the partnership structure, the new MLP will be added to the Yorkville MLP Universe Index following the close on its third day of trading.

The Index is a price return index.

Selection of the Index Constituents

The Yorkville MLP Universe Index serves as the “Eligible Universe” for selection of the Index Constituents for the Index, excluding Variable Distribution MLPs. “Variable Distribution MLPs” are defined as exchange-traded master limited partnership components of the Yorkville MLP Universe Index that do not contemplate in their public offering documents (subject to the assumption that the partnership is able to generate sufficient cash flow from its operations after the payment of fees, expenses, maintenance capital expenditures and cash flow to the general partner) paying a minimum distribution to its common and subordinated unitholders.

The Index Constituents were initially determined from the Eligible Universe on January 8, 2014, the initial “Selection Day,” by applying the following procedures. Future “Selection Days” will occur on the first Business Day of the week of the third Friday in May and November of each year.

On the “Selection Day,” all securities included in the Eligible Universe are individually ranked on the following three separate criteria:

- Historical Distribution Growth; $\frac{D_t}{D_{t-4}}$
- Current Distribution Growth; $\frac{D_t}{D_{t-1}}$ and

- Future Distribution Growth. $\frac{\sum_{t=0}^3 D_t}{\sum_{t=-4}^{-1} D_t}$

D_t = Distribution of period t.

Individually, for each member of the Selection Pool, the Historical Distribution Growth formula calculates the historical distribution growth by comparing the most recent period distribution to the distribution of the period having occurred one year prior.

Individually, for each member of the Selection Pool, the Current Distribution Growth formula calculates the recent distribution growth by comparing the most recent period distribution to the distribution of the most recent prior period.

Individually, for each member of the Selection Pool, the Future Distribution Growth formula estimates future distribution growth by comparing the aggregate distributions of the four most recent periods to analyst estimates of distributions, and in certain circumstances internal estimates, over the next four future periods.

In situations where forward-looking street consensus distribution estimates are either unavailable and/or of insufficient quality or quantity, the Index Sponsor will use in-house estimates for the purpose of calculating the “Future Distribution Growth” factor.

For inclusion in the portfolio, all securities must have daily liquidity of at least \$4 million based on Yorkville’s Intrinsic Liquidity measure (“Intrinsic Liquidity”) and have a market capitalization of at least \$750 million on the Selection Day. The top 25 ranked securities which meet all of the criteria listed above will be selected as the new list of Index Constituents. Securities with final ranks from 26 and higher which meet all listed criteria then become the new list of “Eligible Replacement Securities” should one or more security replacements in the Index become necessary before the next scheduled semi-annual security Selection Day (see below for “— Index Adjustments for Extraordinary Events”).

Weighting of Index Constituents

On the Selection Day, each Index Constituent is weighted proportionally according to its Intrinsic Liquidity. Index Constituents will be capped at a position size of 15.0% upon rebalancing. If the weight of the largest Index Constituent exceeds 15.0%, it is assigned a weight of 15.0% and its excess weight is proportionately distributed to the 24 remaining Index Constituents. This process is repeated until none of the remaining securities has a weight exceeding 15.0%. Solely for the purpose of calculating the 15% cap, all Index Constituents within a particular Affiliated Master Limited Partnership Group shall be aggregated with respect to position size with any excess weight removed proportionately from the members of the respective Affiliated Master Limited Partnership Group and distributed to the remaining constituents.

If the weight of the five largest Index Constituents exceeds more than 50% of the Index upon rebalancing, the weights of the five largest Index Constituents will be reduced on a pro-rata basis to equal no more than 50% of the Index. The excess weight will be distributed across the remaining Index Constituents on a pro-rata basis.

An “Affiliated Master Limited Partnership Group” consists of Index Constituents that are (1) a general partner entity that is an Index Constituent and (2) one or more master limited partnerships that are Index Constituents and such general partner has direct day to day control over the operations and management of the master limited partnership(s). An Affiliated Master Limited Partnership Group shall not exist in relation to particular Index Constituents with which it has no such direct control relationship.

If an unusual or unexpected spike occurs in trading volume of a selected Index Constituent, the Index Sponsor reserves the right to adjust the weighting of the selected Index Constituent prior to the rebalance as to maintain the target liquidity of the Index.

Once the weights of each of the Index Constituents are determined on the Selection Day, the identity and weighting of each Index Constituent will be announced by the Index Sponsor and made available on the <http://www.solactive.com> website.

Ordinary Adjustments

The composition and weights of the Index are ordinarily determined anew and announced semi-annually at the close of trading on the first Business Day of the week of the third Friday of May and November of each year.

The Index is rebalanced semi-annually over a five-day period. The target weights effective after the five-day period are determined as of the Selection Day. On each of the five rebalancing days, the Index is adjusted towards its target weights, determining an individual weighting path for each of the Index Constituents included in the new composition. The weighting path is set in a way that the components each day move 1/5 towards their target weight as calculated at the close of the Selection Day. Closing prices on the relevant Exchange for each Index Constituent will be used to strike the daily execution price for the daily adjustments of the Index Constituents over the five-day period.

The first ordinary adjustment took place in May 2014.

The Index Sponsor shall promptly announce and publish any changes made to the Index composition, weighting, and/or Number of Shares of each Index Constituent, and make available such information on the <http://www.solactive.com> website.

Index Adjustments for Extraordinary Events

If the Index Sponsor determines that, in order to maintain or further the objective of Index integrity, it becomes necessary to remove an Index Constituent from the Index before the next semi-annual Selection Day due to an Extraordinary Event, the Index Sponsor shall select as the replacement security the highest ranking security from the list of Eligible Replacement Securities which was compiled on the last most recent semi-annual Selection Day.

The Index Sponsor shall announce such replacement along with its explanation for such action as soon as practicable after its replacement determination has been made, with such announcement and explanation posted on the <http://www.solactive.com> website.

With regard to any Constituent MLP, an “Extraordinary Event” is any of the following:

- an acquisition or a merger;
- a takeover bid;
- a delisting;
- the nationalization of that Constituent MLP;
- a bankruptcy or insolvency; or
- a forecast material decrease or suspension of distributions.

In the case of delisting due to an acquisition or merger of two Constituent MLPs, the acquirer will receive the additional weighting of the target company.

In the case of delisting due to insolvency or acquisition (the acquirer is not a Constituent MLP), the next member in the Eligible Replacement Securities will be added to the Index. The replacement security shall enter the Index at the lesser of the current weight of the Index Constituent it is replacing or the weight the replacement security would have received at the last rebalance. Any resulting excess weight will be added to the other Index Constituents on a proportional basis.

The replacement shall be made effective after allowing up to three Business Days following the announcement of such replacement to serve as an advance notification period to the market of such Extraordinary Event and enter the Index based upon the Exchange closing price on the effective date.

Among other considerations when deciding about extraordinary Index adjustments, the Index Sponsor will take into account continuous index tradability and preserving the number of Index Constituents. In cases requiring an increase in the number of Index Constituents, the number of Index Constituents shall be reduced again as soon as practicable, as determined by the Index Sponsor.

Index Calculation Methodology

The value of the Index on any Business Day is equal to the sum over all Index Constituents of the products of (a) the Number of Shares of the Index Constituent and (b) the most recent trading price of the Index Constituent on a U.S. securities exchange.

Rounding

The value of the Index will be reported after rounding to two decimal places.

The Number of Shares of the Index Constituents will be rounded to six decimal places. Trading prices will be rounded to two decimal places.

Adjustments

The Index will need to be adjusted for systematic changes in prices once these become effective. This requires the new Number of Shares of the affected Index Constituent to be calculated on an ex-ante basis.

Following the Index Sponsor's determination that an adjustment is necessary, the Index will be adjusted for capital increases, rights issues, splits and par value conversions.

This procedure ensures that the first ex-corporate action Trading Price will be properly reflected in the calculation of the Index.

Dividends and Other Distributions

Regular dividend payments, other ordinary distributions and abnormal distributions are not reflected in the Index's calculation formula.

Corporate Actions

Principles

Following the announcement by a company included in the Index of the terms and conditions of a corporate action, other than regular dividend payments, other ordinary distributions and abnormal distributions, the Index Sponsor will determine whether such corporate action will have a dilution, concentration, or other extraordinary effect on the price of the Index Constituent. If this is the case, the Index Sponsor shall make the necessary adjustments to the affected Index Constituent that it deems necessary in order to offset the dilution, concentration, or other extraordinary effect of the corporate action on the Index calculation, and shall implement such necessary adjustments as of the close of trading on the date of effectiveness of such corporate action. Among other factors which the Index Sponsor will consider are adjustments, if any, made by the recognized U.S. securities exchange(s) on which the Index Constituent is traded, and/or by the related exchange on which options and/or futures contracts on the Index Constituent are traded.

Capital Increases

In the case of capital increases (from the company's own resources or through cash contributions) the new Numbers of Shares are calculated as follows:

$$x_{i,t} = x_{i,t-1} * \frac{p_{i,t-1}}{p_{i,t-1} - rB_{i,t-1}}$$

With

$$rB_{i,t-1} = \frac{p_{i,t-1} - B - N}{BV + 1}$$

$x_{i,t}$ = Number of Shares of Index Constituent i on the day of the distribution

$x_{i,t-1}$ = Number of Shares of Index Constituent i on the day prior to the distribution

$p_{i,t-1}$ = Closing price on the day prior to ex date

$rB_{i,t-1}$ = Calculated value of rights issue

B = Price of rights issue

N = Dividend disadvantage

BV = Subscription ratio

$B=0$ if capital is increased from the company's own resources.

The last dividend paid or the announced dividend proposal is applied as the dividend disadvantage.

Share Splits and Par Value Conversions

In the case of share splits and par value conversions, it is assumed that the prices change in ratio to the number of shares or to the par values. The new Number of Shares is calculated as follows:

$$x_{it} = x_{i,t-1} * \frac{N_{i,t-1}}{N_{i,t}}$$

$N_{i,t-1}$ = Former par value of security class i (or new number of total shares outstanding)

$N_{i,t}$ = New par value of security class i (or former number of total shares outstanding)

$x_{i,t}$ = Number of Shares of the affected Index Constituent on the ex-distribution date

$x_{i,t-1}$ = Number of Shares of the affected Index Constituent as of the close of trading on the day prior to ex-distribution date

Calculation of the Index in a Market Disruption Event

The Index will not be calculated in the event of an Index Market Disruption Event. If the Index Market Disruption Event continues for more than six Trading Days, the Index Sponsor will calculate the Index value, taking into account to the extent practicable the market conditions prevailing at the time, the last reported Trading Price for each of the Index Constituents, as well as any other conditions that it deems relevant for calculating the value of the Index.

An "Index Market Disruption Event" occurs if:

1. one of the following events occurs or exists on a Trading Day prior to the opening quotation time for an Index Constituent:
 - a. trading is suspended or restricted (due to price movements that exceed the limits allowed by the Exchange or an Affiliated Exchange, or for other reasons):
 - i. across the whole Exchange; or
 - ii. in options or futures contracts on or with regard to an Index Constituent or an Index Constituent that is quoted on an Affiliated Exchange; or
 - iii. on an Exchange or in a trading or quotation system (as determined by the Index Calculation Agent) in which an Index Constituent is listed or quoted; or
 - b. an event that (in the assessment of the Index Calculation Agent) generally disrupts and affects the opportunities ability of market participants to execute on the Exchange transactions in respect of an Index Constituent or to determine market values for an Index Constituent or to execute on an Affiliated Exchange transaction with regard to options and futures contracts on these securities or to determine market values for such options or futures contracts; or
2. trading on the Exchange or an Affiliated Exchange is ceased prior to the usual closing time, unless the early cessation of trading is announced by the Exchange or Affiliated Exchange on this Trading Day at least one hour before:
 - a. the actual closing time for normal trading on the Exchange or Affiliated Exchange on the Trading Day in question or, if earlier; or

- b. the closing time (if given) of the Exchange or Affiliated Exchange for the execution of orders at the time the quote is given; or
3. a general moratorium is imposed on banking transactions in the country in which the Exchange is resident if the above-mentioned events are material in the assessment of the Index Calculation Agent, in which case the Index Calculation Agent will make its decision based on those circumstances that he/it considers reasonable and appropriate.

An “Exchange” is, in respect of each Index Constituent, the respective primary exchange where the Index Constituent has its primary listing. The Index Sponsor may decide to declare a different stock exchange the “Exchange” for trading reasons, even if the company is only listed there due to a Stock Substitute.

An “Affiliated Exchange” is with regard to an Index Constituent an exchange, a trading or quotation system on which options and futures contracts on the Index Constituent in question are traded, as specified by the Index Calculation Agent.

Base Date and Base Value

The Index has a base date of June 30, 2008 and a base value of 100.

License Agreement

We have entered into an agreement with the Index Sponsor, which provides us and our affiliates with a non-transferable exclusive license, for a fee, with the right to use the Index in connection with certain securities. The Index Sponsor indices, including the Index, are the exclusive property of the Index Sponsor. The Index Sponsor and the Index Sponsor index names are service mark(s) of the Index Sponsor or its affiliates and have been licensed for use for certain purposes by Royal Bank. The index is calculated by Solactive AG (“Solactive”), which is not affiliated or under common control with the Index Sponsor. The financial securities referred to herein are not sponsored, endorsed, or promoted by the Index Sponsor or Solactive, and neither the Index Sponsor nor Solactive bear any liability with respect to any such financial securities. No purchaser, seller or holder of this product, or any other person or entity, should use or refer to any Index Sponsor trade name, trademark or service mark to sponsor, endorse, market or promote this product without first contacting the Index Sponsor to determine whether the Index Sponsor’s permission is required. Under no circumstances may any person or entity claim any affiliation with the Index Sponsor without the prior written permission of the Index Sponsor.

Disclaimers

The ETNs are not in any way sponsored, endorsed or promoted by the Index Sponsor or the Index Calculation Agent. Neither the Index Sponsor nor the Index Calculation Agent has any obligation to take the needs of any person into consideration in composing, determining, rebalancing or calculating the Index (or causing the Index to be calculated). In addition, neither the Index Sponsor or the Index Calculation Agent makes any warranty or representation whatsoever, express or implied, as to the results to be obtained from the use of the Index and/or the value of the Index at any particular time on any particular day or otherwise, and neither the Index Sponsor nor the Index Calculation Agent shall be liable, whether in negligence or otherwise, to any person for any errors or omissions in the Index or in the calculation of the Index or under any obligation to advise any person of any errors or omissions therein. Neither the Index Sponsor, the Index Calculation Agent, their respective affiliates nor their respective third party licensors is responsible for or has participated in the determination of the prices and amount of the ETNs or the timing of the issuance or sale of the ETNs or in the determination or calculation of the equation by which the ETNs are to be converted into cash. Neither the Index Sponsor nor the Index Calculation Agent has any obligation or liability in connection with the administration, marketing or trading of the ETNs.

Constituent MLPs

The following is a list of Constituent MLPs and related data as of December 31, 2015:

| Security Name | Ticker | Closing Price | Market Capitalization (millions) | Weight in the Index |
|-----------------------------------|---------------|----------------------|---|----------------------------|
| Antero Midstream Partners LP | AM | 22.82 | \$ 4,012 | 1.83% |
| Boardwalk Pipeline Partners, LP | BWP | 12.98 | \$ 3,249 | 2.73% |
| Dominion Midstream Partners, LP | DM | 30.66 | \$ 2,382 | 0.84% |
| Enlink Midstream, LLC | ENLC | 15.09 | \$ 2,478 | 1.28% |
| Enlink Midstream Partners, LP | ENLK | 16.58 | \$ 5,457 | 2.71% |
| Enterprise Products Partners L.P. | EPD | 25.58 | \$ 51,307 | 13.78% |
| EQT Midstream Partners, LP | EQM | 75.46 | \$ 5,959 | 9.95% |
| Energy Transfer Equity, L.P. | ETE | 13.74 | \$ 14,355 | 4.25% |
| Energy Transfer Partners LP | ETP | 33.73 | \$ 16,931 | 5.09% |
| Genesis Energy, L.P. | GEL | 36.74 | \$ 4,039 | 3.25% |
| Holly Energy Partners, L.P. | HEP | 31.14 | \$ 1,827 | 0.81% |
| Magellan Midstream Partners, L.P. | MMP | 67.92 | \$ 15,447 | 10.10% |
| MPLX LP | MPLX | 39.33 | \$ 11,983 | 4.22% |
| Phillips 66 Partners LP | PSXP | 61.40 | \$ 5,028 | 2.46% |
| Spectra Energy Partners, LP | SEP | 47.70 | \$ 14,698 | 4.50% |
| Shell Midstream Partners, L.P. | SHLX | 41.52 | \$ 5,923 | 3.61% |
| Sunoco LP | SUN | 39.61 | \$ 3,897 | 1.14% |
| Sunoco Logistics Partners L.P. | SXL | 25.70 | \$ 6,935 | 1.71% |
| TC PipeLines, LP | TCP | 49.71 | \$ 3,190 | 1.66% |
| Tallgrass Energy Partners, LP | TEP | 41.21 | \$ 2,496 | 1.65% |
| Tesoro Logistics LP | TLLP | 50.32 | \$ 4,460 | 3.55% |
| Valero Energy Partners LP | VLP | 51.61 | \$ 3,371 | 1.14% |
| Western Gas Partners, LP | WES | 47.53 | \$ 6,645 | 3.68% |
| Western Gas Equity Partners, LP | WGP | 36.29 | \$ 7,944 | 1.86% |
| Williams Partners L.P. | WPZ | 27.85 | \$ 16,742 | 12.18% |

Hypothetical Historical and Actual Historical Data on the Index

The following table and graph set forth hypothetical historical performance of the Index from June 30, 2008 to December 31, 2013, and historical performance of the Index from January 8, 2014 to December 31, 2015. The hypothetical data is not actual, was created with the benefit of hindsight and cannot accurately be used to predict future results. The hypothetical data was created by applying the Index methodology to historical closing prices of the Index Constituents, but subject to certain assumptions and modifications that differ from the actual Index methodology and which may be different from the methodology that someone else might use to back-test the Index. We have been advised by the Index Sponsor that it has calculated the hypothetical Index levels using the Index methodology substantially as described above, subject to the following assumptions and modifications:

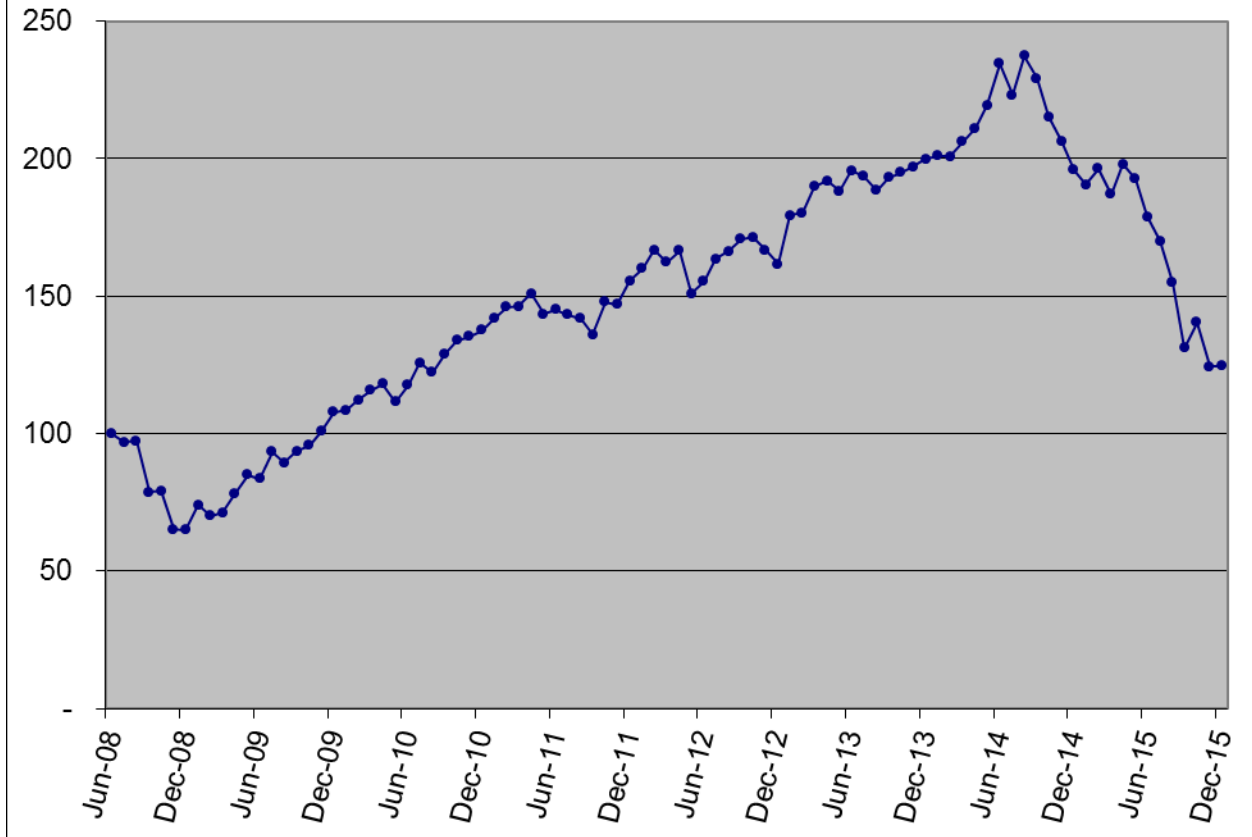
- The Intrinsic Liquidity threshold criterion for inclusion in the Eligible Universe was replaced with the 3-month average daily trading volume historically due to the difficulty in computing Intrinsic Liquidity.
- A threshold of \$2 million in daily liquidity was used for rebalances from Index inception on June 30, 2008 through December 31, 2009. It was then replaced by the current minimum of \$4 million in daily liquidity and \$750 million minimum market capitalization. This was done to ensure that there was a sufficient number of MLPs eligible for inclusion in the Index for the first four rebalances.
- The backtest did not include a capping of the five largest positions to a combined total of 50%. This was incorporated into the index methodology on December 2, 2013 for a special rebalancing prior to the actual inception date of the Index.

If the hypothetical historical performance of the Index were calculated based on different assumptions or if the modifications to the Index methodology were not made, or if the historical period covered by the hypothetical historical performance was different or a longer time period, the hypothetical performance data of the Index might look materially different.

Yorkville MLP Distribution Growth Leaders LiquidSM PR Index

| Month Ending | Index Level |
|---------------------|--------------------|
| 6/30/2008 | 100.00 |
| 9/30/2008 | 78.68 |
| 12/31/2008 | 65.06 |
| 3/31/2009 | 71.24 |
| 6/30/2009 | 83.63 |
| 9/30/2009 | 93.55 |
| 12/31/2009 | 107.83 |
| 3/31/2010 | 115.68 |
| 6/30/2010 | 117.58 |
| 9/30/2010 | 129.11 |
| 12/31/2010 | 137.66 |
| 3/31/2011 | 146.37 |
| 6/30/2011 | 145.23 |
| 9/30/2011 | 136.14 |
| 12/30/2011 | 155.67 |
| 3/30/2012 | 162.38 |
| 6/29/2012 | 155.48 |
| 9/28/2012 | 170.68 |
| 12/31/2012 | 161.75 |
| 3/29/2013 | 189.77 |
| 6/28/2013 | 195.67 |
| 9/30/2013 | 193.21 |
| 12/31/2013 | 199.86 |
| 3/31/2014 | 206.21 |
| 6/30/2014 | 234.48 |
| 9/30/2014 | 229.31 |
| 12/31/2014 | 195.89 |
| 3/31/2015 | 187.05 |
| 6/30/2015 | 178.97 |
| 9/30/2015 | 131.13 |
| 12/31/2015 | 124.61 |

**Yorkville MLP Distribution Growth Leaders Liquid® PR Index
(June 30, 2008 to December 31, 2015)**



Hypothetical Historical Distributions on the Index Constituents

The following table sets forth the hypothetical historical distributions on the Index Constituents based upon a hypothetical \$100 investment in the Index as of the Base Date. The following distributions do not reflect any application of the Multiplier or the Investor Fee and therefore do not reflect the distributions a reference holder would have received. The hypothetical data is not actual, was created with the benefit of hindsight and cannot accurately be used to predict future results. The hypothetical data was created by applying the Index methodology to historical closing prices of the Index Constituents, but subject to certain assumptions and modifications that differ from the actual Index methodology and which may be different from the methodology that someone else might use to back-test the Index. We have been advised by the Index Sponsor that it has calculated the hypothetical historical distributions using the Index methodology substantially as described above, subject to the assumptions and modifications described above under “— Hypothetical and Actual Historical Data on the Index.”

If the hypothetical historical distributions on the Index Constituents were calculated based on different assumptions or if the modifications to the Index methodology were not made, or if the historical period covered by the hypothetical historical performance was different or a longer time period, the hypothetical distributions on the Index Constituents might look materially different.

| <u>Quarter Ending</u> | <u>Distributions</u> | <u>Index Level at Quarter End</u> | <u>Annualized Yield (Distributions / Index Level at Quarter End) × 4</u> |
|---------------------------|----------------------|---------------------------------------|--|
| September 30, 2008 | \$2.00 | 78.68 | 10.19% |
| December 31, 2008 | \$2.06 | 65.06 | 12.65% |
| March 30, 2009 | \$2.05 | 71.24 | 11.52% |
| June 30, 2009 | \$2.06 | 83.63 | 9.87% |
| September 30, 2009 | \$1.99 | 93.55 | 8.51% |
| December 31, 2009 | \$2.01 | 107.83 | 7.45% |
| March 31, 2010 | \$2.02 | 115.68 | 6.99% |
| June 30, 2010 | \$2.05 | 117.58 | 6.99% |
| September 30, 2010 | \$2.10 | 129.11 | 6.50% |
| December 31, 2010 | \$2.13 | 137.66 | 6.18% |
| March 31, 2011 | \$2.10 | 146.37 | 5.73% |
| June 30, 2011 | \$2.13 | 145.23 | 5.87% |
| September 30, 2011 | \$2.24 | 136.14 | 6.59% |
| December 30, 2011 | \$2.28 | 155.67 | 5.86% |
| March 30, 2012 | \$2.33 | 162.38 | 5.74% |
| June 29, 2012 | \$2.38 | 155.48 | 6.12% |
| September 28, 2012 | \$2.46 | 170.68 | 5.77% |
| December 31, 2012 | \$2.52 | 161.75 | 6.23% |
| March 29, 2013 | \$2.48 | 189.77 | 5.22% |
| June 28, 2013 | \$2.52 | 195.67 | 5.16% |
| September 30, 2013 | \$2.55 | 193.21 | 5.28% |
| December 31, 2013 | \$2.61 | 199.86 | 5.23% |
| March 31, 2014 | \$2.64 | 206.21 | 5.10% |
| June 30, 2014 | \$2.92 | 234.48 | 5.00% |
| September 30, 2014 | \$2.41 | 229.31 | 4.20% |
| December 31, 2014 | \$2.59 | 195.89 | 5.30% |
| March 31, 2015 | \$2.40 | 187.05 | 5.10% |
| June 30, 2015 | \$2.46 | 178.97 | 5.5% |
| September 30, 2015 | \$2.50 | 131.13 | 7.6% |
| December 31, 2015 | \$2.55 | 124.61 | 8.2% |

The foregoing information is not necessarily indicative of the future performance of the Index, the distributions on the Index Constituents or of what the value of the ETNs may be. Any historical upward or downward trend in the level of the Index or the amount of the distributions during any period set forth above is not any indication that the Index or the distributions are more or less likely to increase or decrease at any time over the term of the ETNs.

DESCRIPTION OF THE ETNS

The following description of the terms of the ETNs supplements the description of the general terms of the debt securities set forth under the headings “Description of the Notes We May Offer” in the accompanying prospectus supplement and “Description of Debt Securities” in the accompanying prospectus. Capitalized terms used but not defined in this product prospectus supplement have the meanings assigned in the accompanying prospectus supplement, prospectus and the relevant terms supplement.

Indicative Value of the ETNs

An intraday “indicative value,” which is meant to approximate the intrinsic economic value of the ETNs, will be published under the Bloomberg ticker symbol “YGROIV.” In connection with your ETNs, we use the term “indicative value” to refer to the value at a given time determined based on the following equation. The trading price of the ETNs in the secondary market at any time may vary significantly from their closing indicative value and intraday indicative value at such time. The trading price of the ETNs at any time is the price that you may be able to sell your ETNs in the secondary market at such time, if one exists.

Indicative Value = stated Principal Amount per ETN × (Current Index Level / Initial Index Level) + Current Coupon Payment — Current Fee Shortfall

where:

Stated Principal Amount per ETN = \$20;

Current Index Level = The most recent published level of the Index available; provided, however, that during the Final Measurement Period or a Call Measurement Period, the Current Index Level at any time during a Trading Day will be determined by utilizing an equally weighted average of the closing levels of the Index for each Trading Day during such measurement period, with the Trading Days that have not yet closed being represented by the most recent published level of the Index available at the time that the Current Index Level is being determined;

Initial Index Level = 234.72, the closing level of the Index on the Initial Trade Date;

Current Coupon Payment = The calculation of the Coupon Payment with respect to your ETNs, determined as if such date were a Valuation Date applicable to a Repurchase Date, calculated as described below under “Specific Terms of the ETNs.” For the avoidance of doubt, the Current Coupon Payment will include the Coupon Payment with respect to the Coupon Valuation Date immediately preceding such date if, on such date, the Ex-Date with respect to such Coupon Payment has not yet occurred; and

Current Fee Shortfall = The fee shortfall calculated as of such date, after calculation of the Current Coupon Payment.

The indicative value calculation will be provided for reference purposes only. It is not intended as a price or quotation, or as an offer or solicitation for the purchase, sale or termination of your ETNs, nor will it reflect hedging or transaction costs, credit considerations, market liquidity or bid-offer spreads.

The intraday indicative value and the closing indicative value of the ETNs are not the same as the closing price or any other trading price of such ETNs in the secondary market. The closing indicative value will never be less than zero. The closing indicative value will be published on each Trading Day under the Bloomberg ticker symbol “YGROIV.” The publishing of the intraday indicative value by Bloomberg may occasionally be subject to delay or postponement.

Intraday Index Values

The Index is a proprietary index that the Index Sponsor developed and owns. The Index Calculation Agent, under an agreement with the Index Sponsor, calculates and disseminates the Index level approximately every fifteen (15) seconds (assuming the Index level has changed within such fifteen-second interval) from 9:00 a.m. to 4:30 p.m. (New York City time) on each Business Day, and publishes the closing level of the Index for each Business Day at approximately 4:30 p.m. (New York City time) on each such day. For further information on the Index returns, see “The Index.” Index levels are available on Reuters under the ticker symbol “.YGMML”.

The intraday calculation of the Index levels will be provided for reference purposes only. Published calculations of the level of the Index from the Index Calculation Agent may occasionally be subject to delay or postponement. Any such

delays or postponements will affect the current level of the Index and therefore the value of the ETNs in the secondary market. The intraday Index levels published every 15 seconds will be based on the intraday prices of the Index Constituents.

The trading price of the ETNs at any time is the price at which you may be able to sell your ETNs in the secondary market at such time, if one exists. The trading price of the ETNs at any time may vary significantly from the closing indicative value and intraday indicative value of such ETNs at such time. Paying a premium purchase price over the intraday indicative value of the ETNs could lead to significant losses in the event the investor sells such ETNs at a time when such premium is no longer present in the market place or such ETNs are accelerated (including at our option), in which case investors will receive a cash payment based on the closing indicative value as described below. We may, without providing you notice or obtaining your consent, create and issue ETNs in addition to those offered by this pricing supplement having the same terms and conditions as the ETNs. However, we are under no obligation to sell additional ETNs at any time, and we may suspend issuance of new ETNs at any time without providing you notice or obtaining your consent. If we stop selling additional ETNs, the price and liquidity of the ETNs could be materially and adversely affected, including an increase in the premium purchase price of the ETNs over the intraday indicative value of the ETNs. Before trading in the secondary market, you should compare the closing indicative value and intraday indicative value with the then-prevailing trading price of the ETNs. See “Risk Factors” in this pricing supplement for a discussion of factors that may influence the market value of the ETNs prior to maturity.

Split or Reverse Split of the ETNs

RBCCM, as the calculation agent, may initiate a split or reverse split of the ETNs on any trading day. If the Calculation Agent decides to initiate a split or reverse split, the Calculation Agent will issue a notice to holders of the ETNs and a press release announcing the split or reverse split, specifying the effective date of the split or reverse split. The Calculation Agent will determine the ratio of such split or reverse split, as the case may be, using relevant market indicia, and will adjust the terms of the ETNs accordingly. Any adjustment of the closing indicative value will be rounded to eight decimal places.

In the case of a reverse split, we reserve the right to address odd numbers of ETNs (commonly referred to as “partials”) in a manner determined by the Calculation Agent in its sole discretion. For example, if the ETNs undergo a 1-for-4 reverse split, holders who own a number of ETNs on the record date that is not evenly divisible by four will receive the same treatment as all other holders for the maximum number of ETNs they hold that is evenly divisible by four, and we will have the right to compensate holders for their remaining or “partial” ETNs in a manner determined by the Calculation Agent in its sole discretion. Our current intention is to provide holders with a cash payment for their partial ETNs in an amount equal to the appropriate percentage of the closing indicative value of the ETNs on a specified trading day following the announcement date.

A split or reverse split of the ETNs will not affect the aggregate principal amount of ETNs held by an investor, other than to the extent of any “partial” ETNs, but it will affect the number of ETNs an investor holds and the denominations used for trading purposes on the exchange. The minimum stated principal amount of ETNs an investor must offer for repurchase will not change as a result of any split or reverse split of the ETNs, but the number of ETNs corresponding to such minimum stated principal amount will change.

SPECIFIC TERMS OF THE ETNS

In this section, references to “holders” mean those who own the ETNs registered in their own names, on the books that we or the trustee maintain for this purpose, and not those who own beneficial interests in the ETNs registered in street name or in the ETNs issued in book-entry form through DTC or another depository. Owners of beneficial interests in the ETNs should read the section entitled “Description of Debt Securities—Ownership and Book-Entry Issuance” in the accompanying prospectus.

The ETNs are Senior Medium-Term Notes, Series F, as described in the accompanying prospectus supplement and prospectus which also contain a detailed summary of additional provisions of the ETNs and of the senior indenture, dated as of October 23, 2003, as amended, between Royal Bank of Canada and The Bank of New York Mellon, as successor to the corporate trust business of JPMorgan Chase Bank, N.A., as trustee under which the ETNs will be issued (the “Indenture”). You should read all the provisions of the accompanying prospectus and prospectus supplement, including information incorporated by reference, and the Indenture.

Please note that the information about the price to the public and the proceeds to Royal Bank on the front cover of this pricing supplement relates only to the initial sale of the ETNs. If you have purchased the ETNs after the initial sale, information about the price and date of sale to you will be provided in a separate confirmation of sale.

Coupon Payment

On each Coupon Payment Date, for each \$20 principal amount ETN, you will receive a cash payment equal to (a) the MLP Distribution Amount minus (b) the Investor Fee, each calculated as of the corresponding Coupon Valuation Date.

To the extent that the MLP Distribution Amount is less than the Investor Fee, there will be no Coupon Payment made on the corresponding Coupon Payment Date, and an amount equal to the absolute value of the difference between the MLP Distribution Amount and the Investor Fee calculated on such Coupon Valuation Date (the “fee shortfall”) will be added to the Investor Fee with respect to the next Coupon Valuation Date.

The MLP Distribution Amount, as of any Coupon Valuation Date, will be an amount equal to the gross cash distributions that a “reference holder” would have been entitled to receive in respect of the Index Constituents on the “record date” with respect to such Index Constituents, for those cash distributions whose “ex-dividend date” occurs during the Coupon Period with respect to such Coupon Valuation Date. A “reference holder” is, as of any date of determination, a hypothetical holder of a number of units of each Index Constituent equal to the product of (a) the number of units of such Index Constituent as of such date of determination; provided, however, that during the Final Measurement Period or a Call Measurement Period, a reference holder would be considered to own 80%, 60%, 40%, 20% and 0% of such number of units, respectively, on the first, second, third, fourth and last Valuation Dates of the Final Measurement Period or a Call Measurement Period, as applicable, and (b) the Multiplier. The reference holder is intended to reflect the hypothetical exposure the holder of a single ETN would have to each Index Constituent at a given time.

Notwithstanding the foregoing, with respect to cash distributions for an Index Constituent that are scheduled to be paid prior to the applicable Ex-Date, if, and only if, the relevant Constituent MLP fails to pay the distribution to holders of such Index Constituent by the scheduled payment date for such distribution, such distribution will be assumed to be zero for the purposes of calculating the applicable MLP Distribution Amount.

The “Multiplier” is equal to 0.0852079, the quotient of \$20 divided by the Initial Index Level.

The Investor Fee, with respect to any Coupon Valuation Date, including the Final Valuation Date or the last Valuation Date in the Call Measurement Period, will be equal to (a) (i) the annual investor fee multiplied by (ii) the number of days in the Coupon Period with respect to such Coupon Valuation Date divided by 365 multiplied by (iii) \$20 multiplied by (iv) the Index Factor, plus (b) the fee shortfall from the previous Coupon Valuation Date, if any. There will only be a fee shortfall from the previous Coupon Valuation Date if the MLP Distribution Amount on such previous Coupon Valuation Date minus the Investor Fee on such previous Coupon Valuation Date was negative. In such case, the fee shortfall is equal to the absolute value of such negative number.

The annual investor fee is equal to 0.90%.

Because the Investor Fees reduce your Coupon Payment and may reduce the amount of your return at maturity or upon repurchase, the level of the Index must increase by an amount equal to the percentage of the principal amount

represented by the Investor Fee, minus the Coupon Payments, if any, in order for you to receive an aggregated amount over the term of the ETNs equal to at least the principal amount of your investment. If the level of the Index decreases or does not increase sufficiently, you will receive less, and possibly significantly less, than the principal amount of your investment at maturity or upon repurchase by Royal Bank.

The “Index Factor” on any Valuation Date will be equal to the Final Index Level on that Valuation Date divided by the Initial Index Level.

The “Initial Index Level” is equal to 234.72, the closing level of the Index on the Initial Trade Date.

The closing level of the Index on any Trading Day will be published on Reuters under the ticker symbol “.YGMLL”. If a Valuation Date is postponed, the Calculation Agent may determine the closing level of the Index. See “—Market Disruption Events.”

A Coupon Period with respect to each Coupon Valuation Date is the period commencing on, but excluding, the previous Coupon Valuation Date (or, with respect to the first Coupon Period, commencing on but excluding the initial trade date) to, and including such Coupon Valuation Date.

A “Coupon Payment Date” will be the fifteenth Business Day following the applicable Coupon Valuation Date, provided that the Coupon Payment Date corresponding to the Final Valuation Date, any Valuation Date corresponding to a Repurchase Date for a repurchase of the ETNs at the option of the holder, or the last Valuation Date in the Call Measurement Period, with respect to a repurchase of the ETNs at our option, will be the Maturity Date or the related Repurchase Date, as applicable. In addition, if a Repurchase Date or the Maturity Date occurs prior to a scheduled Coupon Payment Date for which the Coupon Payment has been determined but not yet paid, instead of such Coupon Payment being paid on the regularly scheduled Coupon Payment Date, such Coupon Payment will be paid on either (i) the Maturity Date or (ii) the Repurchase Date applicable to a Valuation Date if, as of such Valuation Date with respect to a repurchase at the option of the holder or as of the last Valuation Date in the Call Measurement Period, as applicable, the Ex-Date with respect to such Coupon Payment has not yet occurred, as applicable.

A “Coupon Valuation Date” will be the 15th of February, May, August and November of each calendar year (or if any such day is not a scheduled Trading Day, the next succeeding scheduled Trading Day) as well as the Final Valuation Date, any Valuation Date corresponding to a Repurchase Date for a repurchase of the ETNs at the option of the holder and the last Valuation Date in the Call Measurement Period, with respect to a repurchase of the ETNs at our option. If a Market Disruption Event has occurred or is continuing on a Valuation Date or the Final Valuation Date, the relevant Coupon Payment, if any, will be determined on such postponed Valuation Date or Final Valuation Date, as applicable, as set forth under “—Market Disruption Events.”

The Coupon Payment will be paid to the holder of an ETN as of the applicable Coupon Record Date, which will be the ninth scheduled Business Day following the corresponding Coupon Valuation Date.

The “Ex-Date,” with respect to a Coupon Payment, will be the first Exchange Business Day on which the ETNs trade without the right to receive such Coupon Payment. Under current NYSE Arca practice, the Ex-Date will generally be the second Exchange Business Day prior to the applicable Coupon Record Date.

An “Exchange Business Day” is any day on which the primary exchange or market for trading of the ETNs is scheduled to be open for trading.

Denominations

We will offer the ETNs in denominations of \$20 stated principal amount. Any future issuances of ETNs may be issued at a price higher or lower than the stated principal amount, based on the indicative value of the ETNs at that time.

Payment at Maturity

If you hold your ETNs to maturity, you will receive a cash payment at maturity that is linked to the percentage change in the level of the Index from the Initial Trade Date to the level calculated as of the last Valuation Date during the Final Measurement Period. Your cash payment at maturity will be, per \$20 principal amount ETN, calculated as (a) the product of (i) \$20 and (ii) the Index Factor as of the last Valuation Date in the Final Measurement Period, plus (b) the final Coupon Payment determined on the Final Valuation Date, if any, minus (c) the fee shortfall on the Final Valuation Date, if any. In no event, however, will the payment at maturity be less than zero. If the ETNs undergo a split or reverse split, the

indicative value will be adjusted accordingly. Such adjustment may adversely affect the trading price and liquidity of the ETNs. Any payment on the ETNs is subject to our ability to pay our obligations as they become due.

The Index Factor on the Final Valuation Date will equal the Final Index Level divided by the Initial Index Level.

The Maturity Date will be the third Trading Day after the Final Valuation Date, which is scheduled to be July 19, 2034, unless that day is not a Trading Day, in which case the Maturity Date will be the next following Trading Day. The Calculation Agent may postpone the Final Valuation Date, and therefore the Maturity Date, if a Market Disruption Event occurs or is continuing on a day that would otherwise be the Final Valuation Date. See “—Market Disruption Events.”

The fee shortfall on the Final Valuation Date will be, if the MLP Distribution Amount is less than the Investor Fee, each determined on the Final Valuation Date, equal to the absolute value of the difference between such MLP Distribution Amount and such Investor Fee. If such MLP Distribution Amount is equal to or greater than such Investor Fee, the fee shortfall on the Final Valuation Date will be zero.

Because the Investor Fees reduce your Coupon Payment and may reduce the amount of your return at maturity or upon repurchase, the level of the Index must increase by an amount equal to the percentage of the principal amount represented by the Investor Fee, minus the Coupon Payments, if any, in order for you to receive an aggregated amount over the term of the ETNs equal to at least the principal amount of your investment. If the level of the Index decreases or does not increase sufficiently, you will receive less, and possibly significantly less, than the principal amount of your investment at maturity or upon repurchase by Royal Bank.

The closing level of the Index on any Valuation Date during the Final Measurement Period, including the Final Valuation Date, will be published on Reuters under the ticker symbol “.YGMLL”; provided, however, in the event that any such Valuation Date, including the Final Valuation Date, is postponed due to a Market Disruption Event, the Calculation Agent will determine the closing level of the Index for the purposes of determining the Index Factor according to the Index methodology as described below under “—Market Disruption Events.”

If the Maturity Date is not a Business Day, the Maturity Date will be the next following Business Day. In the event that payment at maturity is deferred beyond the stated Maturity Date as provided herein, no interest or other amount will accrue or be payable with respect to that deferred payment.

A “Trading Day” is a day on which (i) the level of the Index is calculated and published, (ii) trading is generally conducted on the New York Stock Exchange, NYSE Arca and the Nasdaq Stock Market and (iii) trading is generally conducted on the markets on which the Index Constituents are traded, in each case as determined by the Calculation Agent in its sole discretion.

A “Business Day” is a Monday, Tuesday, Wednesday, Thursday or Friday that is not a day on which banking institutions in New York City generally are authorized or obligated by law, regulation or executive order to close.

Valuation Dates

The applicable Valuation Date means (i) with respect to a repurchase at the option of the ETN holder, the Trading Day immediately succeeding the Business Day on which you deliver a valid repurchase notice to Royal Bank, (ii) with respect to a repurchase of the ETNs at our option, each of the five Trading Days during the Call Measurement Period and (iii) with respect to the Maturity Date, each of the five Trading Days during the Final Measurement Period, ending on the Final Valuation Date. The “Final Valuation Date” will be the Trading Day that falls on July 14, 2034. If any of the applicable Valuation Dates, including the last Valuation Date in the Call Measurement Period or the Final Valuation Date, is not a Trading Day, then such Valuation Date, last Valuation Date in the Call Measurement Period or Final Valuation Date shall be the next following Trading Day. If a Market Disruption Event occurs or is continuing on any Valuation Date (including the last Valuation Date in the Call Measurement Period or the Final Valuation Date), then such Valuation Date will be postponed to the next Trading Day on which a Market Disruption Event does not occur or is not continuing. See “—Market Disruption Events.”

Payment Upon Repurchase

Prior to maturity, you may, subject to certain restrictions, choose to offer your ETNs for repurchase by Royal Bank on any Business Day during the term of the ETNs through the Business Day immediately preceding the last scheduled Valuation Date that is neither the first Valuation Date in the Call Measurement Period or the Final Measurement Period, as applicable. If you choose to offer your ETNs for repurchase, you must offer at least \$1,000,000 stated principal amount of

ETNs (50,000 ETNs) to Royal Bank for repurchase on any Repurchase Date. To satisfy the minimum repurchase amount, your broker or other financial intermediary may bundle your ETNs for repurchase with those of other investors to reach this minimum amount, although there is no guarantee that they will do so. We or RBCCM as the Calculation Agent may from time to time reduce, in part or in whole, the minimum repurchase amount. Any such reduction will be applied on a consistent basis for all holders of the ETNs at the time the reduction becomes effective. If you offer at least the applicable minimum repurchase amount of ETNs to Royal Bank for repurchase and fulfill the repurchase procedures described below for a Repurchase Date, Royal Bank will be obligated to repurchase your ETNs. If the ETNs undergo a split or reverse split, the minimum number of ETNs needed to exercise your right to redeem will be adjusted so that the aggregate stated principal amount of ETNs needed to exercise your right to redeem will be the same.

In addition, we have the right to repurchase the ETNs, in whole but not in part, on any Business Day during the term of the ETNs on or after January 29, 2015 to and including July 18, 2034. To repurchase the ETNs, we will deliver an irrevocable call notice to DTC, as holder of the global note. The call notice will include, among other items, the dates of the Call Measurement Period and the last Business Day on which a holder may submit the offer to repurchase. Once we issue a call notice to repurchase the ETNs at our option, the last Valuation Date for a repurchase of the ETNs at your option will be the Trading Day prior to the first day of the Call Measurement Period.

If your ETNs are repurchased at your election, on the corresponding Repurchase Date, you will receive a cash payment in an amount equal to the “daily repurchase value,” calculated as a cash payment per \$20 principal amount ETN equal to (a) the product of (i) \$20 and (ii) the Index Factor on the applicable Valuation Date, plus (b) the Coupon Payment determined on the applicable Valuation Date, if any, minus (c) the fee shortfall on such Valuation Date, if any. In no event, however, will the daily repurchase value be less than zero. In addition, you will receive the Coupon Payment with respect to the Coupon Valuation Date immediately preceding the applicable Valuation Date if, on the relevant Valuation Date, the Ex-Date with respect to such Coupon Payment has not yet occurred. RBCCM may charge investors an additional fee of up to 0.125% times the daily repurchase value for each ETN that is repurchased at the investor’s option. Any payment on the ETNs is subject to our ability to pay our obligations as they become due.

The daily repurchase value is intended to induce arbitrageurs to counteract any trading of the ETNs at a premium or discount to their indicative value, though there can be no assurance that arbitrageurs will employ the repurchase feature in this manner.

If we repurchase the ETNs at our option, you will receive a cash payment equal to the “call settlement value,” calculated as a cash payment per \$20 principal amount ETN equal to (a) the product of (i) \$20 and (ii) the Index Factor as of the last Valuation Date in the Call Measurement Period, plus (b) the Coupon Payment determined on such last Valuation Date, if any, minus (c) the fee shortfall on such last Valuation Date, if any. In no event, however, will the call settlement value be less than zero.

The fee shortfall on such last Valuation Date will be, if the MLP Distribution Amount is less than the Investor Fee, each determined on such last Valuation Date, equal to the absolute value of the difference between such MLP Distribution Amount and such Investor Fee. If such MLP Distribution Amount is equal to or greater than such Investor Fee, the fee shortfall on such last Valuation Date will be zero.

The “Index Factor” on such last Valuation Date will equal the Final Index Level divided by the Initial Index Level.

Because the Investor Fee reduces your Coupon Payment and may reduce the amount of your return at maturity or upon repurchase, the level of the Index must increase by an amount equal to the percentage of the principal amount represented by the Investor Fee, minus the Coupon Payments, if any, in order for you to receive an aggregated amount over the term of the ETNs equal to at least the principal amount of your investment. If the level of the Index decreases or does not increase sufficiently, you will receive less, and possibly significantly less, than the principal amount of your investment at maturity or upon repurchase by Royal Bank.

A “Repurchase Date” for a repurchase of the ETNs at the option of the holder is the third Business Day following the related Valuation Date. Unless the ETNs have been previously repurchased at our option or the scheduled Repurchase Date is postponed due to a Market Disruption Event, the final day on which Royal Bank will repurchase your ETNs at your option will be July 12, 2034. As such, we anticipate that you must offer your ETNs for repurchase no later than July 6, 2034. A Repurchase Date for a repurchase of the ETNs at our option will be the third Trading Day following the last Valuation Date in the Call Measurement Period.

The closing level of the Index on any Valuation Date will be published on Reuters under the ticker symbol “YGMML”; provided, however, in the event that a Valuation Date is postponed due to a Market Disruption Event, the

Calculation Agent will determine the closing level of the Index for the purposes of determining the Index Factor according to the Index methodology described below in “—Market Disruption Events.”

In the event that payment upon repurchase by Royal Bank is deferred beyond the original Repurchase Date as provided herein, no interest or other amount will accrue or be payable with respect to that deferred payment.

Repurchase Procedures

Repurchase at Your Option

You may, subject to the minimum repurchase amount described above, elect to offer your ETNs to Royal Bank for repurchase on any Business Day during the term of the ETNs until the Business Day immediately preceding the last scheduled Valuation Date that is neither the first Valuation Date in the Call Measurement Period or the Final Measurement Period, as applicable. If you wish to offer your ETNs to Royal Bank for repurchase, you and your broker must follow the following procedures:

- your broker must deliver a completed irrevocable Offer for Repurchase, a form of which is attached as Annex A to this pricing supplement, to Royal Bank by 4:00 p.m., New York City time, on the Business Day immediately preceding the Valuation Date applicable to the Repurchase Date. One portion of the Offer for Repurchase must be completed by you as beneficial owner of the ETNs and the other portion must be completed by your broker. You must offer \$1,000,000 principal amount or more of your ETNs (50,000 ETNs) for repurchase by Royal Bank on any Repurchase Date. To satisfy the minimum repurchase amount, your broker or other financial intermediary may bundle your ETNs for repurchase with those of other investors to reach this minimum amount, although there is no guarantee that they will do so. We or the Calculation Agent may from time to time reduce, in part or in whole, the minimum repurchase amount. Any such reduction will be applied on a consistent basis for all holders of the ETNs at the time the reduction becomes effective. Royal Bank must acknowledge receipt from your broker in order for your offer to be effective. If the ETNs undergo a split or reverse split, the minimum number of ETNs needed to exercise your right to redeem will be adjusted so that the aggregate stated principal amount of ETNs needed to exercise your right to redeem will be the same;
- your broker must book a delivery vs. payment trade with respect to your ETNs on the applicable Valuation Date at a price equal to the applicable daily repurchase value, facing Royal Bank; and
- your broker must cause your DTC custodian to deliver the trade as booked for settlement via DTC at or prior to 10:00 a.m., New York City time, on the applicable Repurchase Date (the third Business Day following the Valuation Date).

Different brokers and DTC participants may have different deadlines for accepting instructions from their customers. Accordingly, you should consult the brokerage firm or other DTC participant through which you own your interest in the ETNs in respect of such deadlines. If Royal Bank does not receive your offer for repurchase from your broker or DTC participant by 10:00 a.m., New York City time, on the Business Day immediately preceding a Valuation Date, your offer will not be effective and we will not accept your offer to us to repurchase your ETNs on the applicable Repurchase Date. Any repurchase instructions which we receive in accordance with the procedures described above will be irrevocable.

For the avoidance of doubt, RBCCM will act as our agent in connection with any repurchases at your option and may charge a fee of up to 0.125% times the daily repurchase value for each ETN repurchased.

Repurchase at Our Option

We have the right to repurchase the ETNs, in whole but not in part, on any Business Day during the term of the ETNs on or after January 29, 2015 to and including July 18, 2034. To call the ETNs for repurchase, we will deliver an irrevocable call notice to DTC (the holder of the global note).

Market Disruption Events

As set forth under “—Payment at Maturity” and “—Payment Upon Repurchase” above, the Calculation Agent will determine the closing level of the Index on each Valuation Date, including the Final Valuation Date.

A “Market Disruption Event” means the occurrence or existence on any scheduled Trading Day during the one-half hour period that ends at the relevant Valuation Time, of any suspension, absence or limitation imposed on trading (by reason of movements in price exceeding limits permitted by the relevant exchange or otherwise) on:

- (a) the Primary Exchange for trading in the Index Constituent, whether by reason of movements in price exceeding limits permitted by the Primary Exchange or otherwise;
- (b) a Related Exchange in options contracts on the Index (or a successor index) or to a material number of the Index Constituents, whether by reason of movements in price exceeding limits permitted by such Related Exchange or otherwise; or
- (c) a Related Exchange in futures contracts on the Index (or a successor index) or to a material number of the Index Constituents, whether by reason of movements in price exceeding limits permitted by such Related Exchange or otherwise;

and, in the case of (a), (b) or (c), a determination by the Calculation Agent that such suspension or limitation is material.

In addition, a determination by the Calculation Agent, in its sole discretion, that any of the events described above materially interfered with our ability or the ability of any of our affiliates to adjust or unwind a material portion of any hedge related to the ETNs, will be deemed to have been a Market Disruption Event.

The following events will not be Market Disruption Events with respect to the Index:

- (a) a limitation on the hours or numbers of days of trading, but only if the limitation results from an announced change in the regular business hours of the Primary Exchange or Related Exchange; or
- (b) a decision to permanently discontinue trading in the options or futures contracts relating to the Index or any Index Constituent.

“Primary Exchange” means, with respect to each Index Constituent or each constituent underlying a successor index (as defined below), the primary exchange or market of trading such Index Constituent or such constituent underlying a successor index.

“Related Exchange” means any exchange on which futures or options contracts relating to the Index or to a material number of the Index Constituents are traded and any successor to such exchange or any substitute exchange to which trading in futures or options contracts relating to the Index has temporarily relocated.

“Exchange” means the principal exchange on which the relevant security is traded.

“Valuation Time” means the time at which the Index Calculation Agent or the Index Sponsor calculates the closing level of the Index on any Trading Day.

A Valuation Date with respect to a repurchase of the ETNs at the option of the holder will be postponed and thus the determination of the closing level of the Index will be postponed if the Calculation Agent reasonably determines that, on such Valuation Date, a Market Disruption Event has occurred or is continuing or such day is not a Trading Day. In that case, that Valuation Date will be postponed to the next Trading Day on which the Calculation Agent determines that no Market Disruption Event occurs or is continuing, unless in respect of such Valuation Date the Calculation Agent determines that a Market Disruption Event occurs or is continuing on each of the six scheduled Trading Days immediately following the scheduled Valuation Date. In that case, the sixth scheduled Trading Day following the scheduled Valuation Date will be deemed to be the Valuation Date, notwithstanding the Market Disruption Event.

Any of the Valuation Dates in the Final Measurement Period or the Call Measurement Period, as applicable (each such Valuation Date referred to as an “Averaging Date”), will be postponed and thus the determination of the closing level of the Index will be postponed if the Calculation Agent reasonably determines that, on such Averaging Date, a Market Disruption Event has occurred or is continuing or such day is not a Trading Day. In such case, that Averaging Date will be postponed to the next Trading Day on which the Calculation Agent determines that no Market Disruption Event occurs or is continuing, unless in respect of such Averaging Date the Calculation Agent determines that a Market Disruption Event occurs or is continuing on each of the three scheduled Trading Days immediately following the scheduled Averaging Date. No Averaging Date in the Final Measurement Period will be postponed to a date later than the originally scheduled Maturity

Date or, if the originally scheduled Maturity Date is not a Business Day, later than the first Business Day after the originally scheduled Maturity Date. No Averaging Date in the Call Measurement Period will be postponed to a date later than the originally scheduled last Valuation Date of the Call Measurement Period or, if such originally scheduled last Valuation Date is not a Business Day, later than the first Business Day after such originally scheduled last Valuation Date. If a Market Disruption Event occurs or is continuing on such last possible Averaging Date or such last possible day is not a Trading Day, that day will nevertheless be the last Averaging Date for purposes of calculating the Final Index Level. In such cases, more than one Averaging Date may occur simultaneously on the last possible Averaging Date for purposes of calculating the Final Index Level.

In the event that a Valuation Date is postponed to the sixth scheduled Trading Day or an Averaging Date is postponed to the originally scheduled Maturity Date or last Valuation Date in the Call Measurement Period, as applicable, in accordance with the two preceding paragraphs, the Calculation Agent will determine the closing level for the Index on that deemed Valuation Date or Averaging Date, as applicable, in accordance with the formula for and method of calculating the Index last in effect prior to the commencement of the Market Disruption Event using exchange traded prices of the Index Constituents on the relevant exchanges (as determined by the Calculation Agent in its sole and absolute discretion) or, if trading in any Index Constituent has been materially suspended or materially limited, its good faith estimate of the prices that would have prevailed on the exchanges (as determined by the Calculation Agent in its sole and absolute discretion) but for the suspension or limitation, as of the Valuation Time on that deemed Valuation Date or Averaging Date, as applicable, of each Index Constituent (subject to the provisions described under “—Discontinuation or Modification of the Index” herein).

For example, if the Final Measurement Period were to fall on July 10-14, 2034 and July 19, 2034 was the scheduled Maturity Date, a Market Disruption Event occurred and was continuing on each day during the Final Measurement Period, and July 17, 2034 was a Trading Day and also a Valuation Date on which no Market Disruption Event occurred and was continuing, then the closing levels of the Index for July 10-11, 2034 would be determined as described in the immediately preceding paragraph on July 13 and 14, 2034, respectively, and the closing levels of the Index for July 12-14, 2034 would be determined simultaneously on July 17, 2034, with the closing level of the Index on July 17, 2034 being used as the closing level of the Index for each of July 12-14, 2034. The Maturity Date would be postponed to the fifth Business Day after July 17, 2034.

Any such postponement or determinations by the Calculation Agent may adversely affect your return on the ETNs. In addition, no interest or other payment will be payable as a result of such postponement.

If a scheduled Valuation Date is postponed due to a Market Disruption Event, the Repurchase Date will also be postponed so that such Repurchase Date occurs on the third Business Day following the Valuation Date as postponed.

If the Final Valuation Date is postponed due to a Market Disruption Event, the Maturity Date will also be postponed so that the Maturity Date occurs on the fifth Business Day following the Final Valuation Date as so postponed.

Default Amount on Acceleration

For the purpose of determining whether the holders of our senior medium-term notes, of which the ETNs are a part, are entitled to take any action under the Indenture, we will treat the stated principal amount of each ETN outstanding as the principal amount of that ETN. Although the terms of the ETNs may differ from those of the other senior medium-term notes, holders of specified percentages in principal amount of all senior medium-term notes, together in some cases with other series of our debt securities, will be able to take action affecting all the senior medium-term notes, including the ETNs. This action may involve changing some of the terms that apply to the senior medium-term notes, accelerating the maturity of the senior medium-term notes (in accordance with the acceleration provisions set forth in the accompanying prospectus) after a default or waiving some of our obligations under the Indenture.

In case an event of default (as defined in the accompanying prospectus) with respect to any ETNs shall have occurred and be continuing, the amount declared due and payable upon any acceleration of the ETNs will be determined by the Calculation Agent and will equal, for each ETN you then hold, the daily repurchase value determined by the Calculation Agent on the Trading Day immediately preceding the date of acceleration. That Trading Day will be treated as the Valuation Date for purposes of calculating the daily repurchase value in the event of an acceleration of maturity.

If the maturity of the ETNs is accelerated because of an event of default, we will, or will cause the Calculation Agent to, provide written notice to the trustee at its New York office, on which notice the trustee may conclusively rely, and to the depository, of the cash amount due with respect to the ETNs as promptly as possible and in no event later than two business days after the date of acceleration.

Further Issuances

We may, from time to time, without notice to or the consent of the holders of the ETNs, create and issue additional securities having the same terms and conditions as the ETNs offered by this pricing supplement, and ranking on an equal basis with the ETNs in all respects. Although the denomination and stated principal amount of each ETN is \$20, any future issuances of ETNs may be issued at a price higher or lower than the stated principal amount, based on the indicative value of the ETNs at that time. If there is substantial demand for the ETNs, we may issue additional ETNs frequently. However, we are under no obligation to issue or sell additional ETNs at any time, and if we do sell additional ETNs, we may limit or restrict such sales, and we may stop selling additional ETNs at any time. If we stop selling additional ETNs, the trading price and liquidity of the ETNs could be materially and adversely affected. We anticipate that the maximum aggregate outstanding principal amount of ETNs that we will issue will be \$200,000,000 (10,000,000 ETNs). However, we have no obligation to issue up to this amount or any specific amount of ETNs and in our sole discretion, may issue ETNs in excess of this amount. Such additional ETNs will be consolidated and form a single series with the ETNs. We have no obligation to take your interests into account when deciding to issue additional securities. A form of request for the creation of new issuances of ETNs is attached hereto as Annex B. If on any Valuation Date we price an additional ETN creation a Market Disruption Event occurs or is occurring, we will determine the closing level of the Index applicable to such creation in accordance with the procedures under “—Market Disruption Events.”

Discontinuation or Modification of the Index

If the publication of the Index is discontinued and the Index Sponsor or any other person or entity calculates and publishes an Index that the Calculation Agent, after consultation with Royal Bank, reasonably determines is comparable to the Index and approves as a successor index (any such index, the “successor index”), then the Calculation Agent will determine the level of the Index on the applicable Valuation Date and the amount payable at maturity or upon repurchase by Royal Bank by reference to such successor index for the period following the discontinuation of the Index.

If the Index Sponsor discontinues publication of the Index and a successor index is not selected as described above or is no longer published on any date of determination of the level of the Index, the value to be substituted for the Index on that date will be a value computed by the Calculation Agent for that date in accordance with the procedures last used to calculate the Index prior to any such discontinuance.

If a successor index is selected or the Calculation Agent calculates a value as a substitute for the Index as described above, the successor index or value will be substituted for the Index for all purposes, including for purposes of determining whether a Market Disruption Event occurs.

If the Calculation Agent reasonably determines that the Index, the Index Constituents or the method of calculating the Index or any successor index has been changed at any time in any significant respect, whether the change is made by the Index Sponsor under its existing policies or following a modification of those policies, is due to the publication of a successor index, is due to events affecting one or more of the Index Constituents, or is due to any other reason—then the Calculation Agent, after consultation with Royal Bank, will be permitted (but not required) to make such adjustments to the Index or method of calculating the Index as it reasonably believes are appropriate to ensure that the level of the Index used to determine the amount payable on the Maturity Date or upon repurchase by Royal Bank replicates the economic character of the Index.

In the event that the Calculation Agent makes such adjustments to the Index or a successor index, it will accordingly calculate the Index Factor, the Daily Repurchase Value, if any, the Investor Fee, the Coupon Payment, if any, the amount payable upon an acceleration of maturity and the payment at maturity, based on the relevant index levels calculated by the Calculation Agent, as adjusted. Accordingly, if the method of calculating the Index or a successor index is modified so that the level of the Index or such successor index is a fraction of what it would have been if there had been no such modification (e.g., due to a split in the Index), which, in turn, causes the level of the Index or such successor index to be a fraction of what it would have been if there had been no such modification, then the Calculation Agent will make such calculations and adjustments in order to arrive at a level for the Index or such successor index as if it had not been modified (e.g., as if such split had not occurred).

All determinations and adjustments to be made by the Calculation Agent with respect to the level of the Index and the amount payable at maturity or upon repurchase by Royal Bank or otherwise relating to the level of the Index may be made in the Calculation Agent’s reasonable discretion. The Calculation Agent shall make all determinations and adjustments such that, to the extent practicable, the fundamental economic terms of the Index are equivalent to those immediately prior to the event requiring or permitting such determinations or adjustments. See “Risk Factors” in this pricing supplement for a discussion of certain conflicts of interest which may arise with respect to the Calculation Agent.

Payment of Additional Amounts

We will pay any amounts to be paid by us on the ETNs without deduction or withholding for, or on account of, any and all present or future income, stamp and other taxes, levies, imposts, duties, charges, fees, deductions, or withholdings (“taxes”) now or hereafter imposed, levied, collected, withheld, or assessed by or on behalf of Canada or any Canadian political subdivision or authority that has the power to tax, unless the deduction or withholding is required by law or by the interpretation or administration thereof by the relevant governmental authority. At any time a Canadian taxing jurisdiction requires us to deduct or withhold for or on account of taxes from any payment made under or in respect of the ETNs, we will pay such additional amounts (“Additional Amounts”) as may be necessary so that the net amounts received by each holder (including Additional Amounts), after such deduction or withholding, shall not be less than the amount the holder would have received had no such deduction or withholding been required.

However, no Additional Amounts will be payable with respect to a payment made to a holder of an ETN or of a right to receive payments in respect thereto (a “Payment Recipient”), which we refer to as an “Excluded Holder,” in respect of a beneficial owner or Payment Recipient:

- (i) with which we do not deal at arm’s length (within the meaning of the Income Tax Act (Canada)) at the time of making such payment;
- (ii) which is subject to such taxes by reason of the holder being connected presently or formerly with Canada or any province or territory thereof otherwise than by reason of the holder’s activity in connection with purchasing the ETNs, the holding of the ETNs or the receipt of payments thereunder;
- (iii) which is, or which does not deal at arm’s length with a person who is, a “specified shareholder” (within the meaning of subsection 18(5) of the Income Tax Act (Canada)) of Royal Bank of Canada (generally a person will be a “specified shareholder” for this purpose if that person, either alone or together with persons with whom the person does not deal at arm’s length, owns 25% or more of (a) our voting shares, or (b) the fair market value of all of our issued and outstanding shares);
- (iv) which presents such ETN for payment (where presentation is required) more than 30 days after the relevant date (except to the extent that the holder thereof would have been entitled to such Additional Amounts on presenting an ETN for payment on the last day of such 30 day period); for this purpose, the “relevant date” in relation to any payments on any ETN means:
 - (a) the due date for payment thereof (whether upon a repurchase or at maturity), or
 - (b) if the full amount of the monies payable on such date has not been received by the trustee on or prior to such due date, the date on which the full amount of such monies has been received and notice to that effect is given to holders of the ETNs in accordance with the Indenture;
- (v) who could lawfully avoid (but has not so avoided) such withholding or deduction by complying, or requiring that any third party comply with, any statutory requirements or by making, or requiring that any third party make, a declaration of non-residence or other similar claim for exemption to any relevant tax authority; or
- (vi) who is subject to deduction or withholding on account of any tax, assessment, or other governmental charge that is imposed or withheld by reason of the application of Section 1471 through 1474 of the United States Internal Revenue Code of 1986, as amended (the “Code”) (or any successor provisions), any regulation, pronouncement, or agreement thereunder, official interpretations thereof, or any law implementing an intergovernmental approach thereto, whether currently in effect or as published and amended from time to time.

For purposes of clause (iv) above, if an ETN is presented for payment more than 30 days after the relevant date, we shall only be required to pay such Additional Amounts as shall have accrued as of such 30th day, and no further Additional Amounts shall accrue or become payable after such date.

For the avoidance of doubt, we will not have any obligation to pay any holders Additional Amounts on any tax which is payable otherwise than by deduction or withholding from payments made under or in respect of the ETNs upon a repurchase or at maturity.

We will also make such withholding or deduction and remit the full amount deducted or withheld to the relevant authority in accordance with applicable law. We will furnish to the trustee, within 30 days after the date the payment of any

taxes is due pursuant to applicable law, certified copies of tax receipts evidencing that such payment has been made or other evidence of such payment satisfactory to the trustee. We will indemnify and hold harmless each holder of the ETNs (other than an Excluded Holder) and upon written request reimburse each such holder for the amount of (x) any taxes so levied or imposed and paid by such holder as a result of payments made under or with respect to the ETNs and (y) any taxes levied or imposed and paid by such holder with respect to any reimbursement under (x) above, but excluding any such taxes on such holder's net income or capital.

For additional information, see the section entitled "Canadian Taxation" in the accompanying prospectus.

Manner of Payment and Delivery

Any payment on or delivery of the ETNs at maturity will be made to accounts designated by you and approved by us, or at the office of the trustee in New York City, but only when the ETNs are surrendered to the trustee at that office. We also may make any payment or delivery in accordance with the applicable procedures of the depository.

Role of Calculation Agent

RBCCM, an affiliate of ours, will serve as the Calculation Agent. The Calculation Agent will, in its reasonable discretion, make all determinations regarding the ETNs, including, but not limited to, any Coupon Payment, the fee shortfall, the MLP Distribution Amount, the amount payable in respect of your ETNs at maturity or upon repurchase by Royal Bank, Market Disruption Events, Business Days, Trading Days, Valuation Dates, the daily repurchase value, the Coupon Payment, the Investor Fee, the Index Factor, the amount payable upon an acceleration of maturity, the Initial Index Level, the Final Index Level, the Maturity Date, Repurchase Dates, and any other calculations or determinations with respect to the ETNs. Absent manifest error, all determinations of the Calculation Agent will be final and binding on you and us, without any liability on the part of the Calculation Agent. You will not be entitled to any compensation from us for any loss suffered as a result of any of the above determinations by the Calculation Agent. We may appoint a different Calculation Agent from time to time after the date of this pricing terms supplement without your consent and without notifying you.

The Calculation Agent will provide written notice to the trustee at its New York office, on which notice the trustee may conclusively rely, of the amount to be paid at maturity or upon repurchase by the holder or by the Bank, or on a Coupon Payment Date, on or prior to 12:00 p.m., New York City time, on the Business Day immediately preceding the Maturity Date, any Repurchase Date or any Coupon Payment Date, as applicable.

Defeasance

The provisions described in the accompanying prospectus under the heading "Description of Debt Securities — Defeasance" are not applicable to the ETNs.

Non-Business Days

If any date of payment for a coupon or principal for the ETNs falls on a day that is not a Business Day, we will make the required payment on the next succeeding Business Day, and no interest will accrue in respect of the payment made on that next succeeding Business Day.

CLEARANCE AND SETTLEMENT

You will not have the right to receive physical certificates evidencing your ownership of the ETNs except under limited circumstances. Instead, we will issue the ETNs in the form of a global certificate (the global note), which will be held by DTC or its nominee. Direct and indirect participants in DTC will record beneficial ownership of the ETNs by individual investors. Accountholders in the Euroclear or Clearstream Banking clearance systems may hold beneficial interests in the ETNs through the accounts those systems maintain with DTC. DTC participants that hold the ETNs through DTC on behalf of investors will follow the settlement practices applicable to equity securities in DTC's settlement system with respect to the distribution of the ETNs and secondary market trading between DTC participants. You should refer to the section "Description of Debt Securities— Ownership and Book-Entry Issuance" in the accompanying prospectus.

USE OF PROCEEDS AND HEDGING

We will use the net proceeds we receive from the sale of the ETNs for the purposes we describe in the accompanying prospectus supplement under "Use of Proceeds." We or our affiliates may also use those proceeds in transactions intended to hedge our obligations under the ETNs as described below.

In anticipation of the sale of the ETNs, we or our affiliates expect to enter into hedging transactions involving purchases of securities included in or linked to the Index and/or listed and/or over-the-counter derivative instruments linked to the Index prior to or on the pricing date. From time to time, we or our affiliates may enter into additional hedging transactions or unwind those we have entered into. In this regard, we or our affiliates may:

- acquire or dispose of the Index Constituents or other securities of the Constituent MLPs;
- acquire or dispose of long or short positions in listed or over-the-counter derivative instruments based on the level of the Index, the Index Constituents or its Constituent MLPs; or
- any combination of the above two.

We or our affiliates may acquire a long or short position in securities similar to the ETNs from time to time and may, in our or their sole discretion, hold or resell those similar securities.

We or our affiliates may close out our or their hedge on or before the Final Valuation Date. That step may involve sales or purchases of the Index Constituents or other securities of its Constituent MLPs or over-the-counter derivative instruments linked to those assets.

The hedging activity discussed above may adversely affect the market value of the ETNs from time to time. See "Risk Factors — Our hedging activity may affect the value of the Index Constituents and therefore the market value of the ETNs" and "— We or our affiliates may have economic interests adverse to those of the holders of the ETNs" in this pricing supplement for a discussion of these adverse effects.

SUPPLEMENTAL PLAN OF DISTRIBUTION (CONFLICTS OF INTEREST)

The terms and conditions set forth in the Distribution Agreement dated July 23, 2013 among Royal Bank of Canada and the Agents party thereto, including RBCCM, govern the sale and purchase of the ETNs.

We sold \$4,000,000 in principal amount on the Initial Trade Date through RBCCM and through one or more dealers purchasing as principal through RBCCM for \$20 per ETN (200,000 ETNs), which is the stated principal amount per ETN. We received proceeds equal to 100% of the offering price of the ETNs issued and sold on the Initial Settlement Date. Additional ETNs may be offered and sold after the Initial Trade Date from time to time through RBCCM and one or more dealers at a price that is higher or lower than the stated principal amount, based on the indicative value of the ETNs at that time. Sales of the ETNs after the Initial Trade Date will be made at market prices prevailing at the time of sale, at prices related to market prices or at negotiated prices. We will receive proceeds equal to 100% of the price that the ETNs are sold to the public, less any commissions paid to RBCCM. We may not sell the full amount of ETNs offered by this pricing supplement, and may discontinue sales of the ETNs at any time.

We may deliver ETNs against payment therefor on a date that is greater than three Business Days following the date of sale of any ETNs. Under Rule 15c6-1 of the Securities Exchange Act of 1934, trades in the secondary market generally are required to settle in three business days, unless parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to transact in ETNs that are to be issued more than three business days after the related trade date will be required to specify alternative settlement arrangements to prevent a failed settlement.

RBCCM and any other agent and dealer in the initial and any subsequent distribution are expected to charge normal commissions for the purchase of the ETNs.

Broker-dealers, including RBCCM, may make a market in the ETNs, although none of them are obligated to do so and any of them may stop doing so at any time without notice. This prospectus (as such term includes this pricing supplement and the accompanying prospectus supplement and prospectus) may be used by such dealers and our affiliates in connection with market-making transactions. In these transactions, RBCCM or other dealers may resell an ETN covered by this prospectus that they acquire from us, RBCCM or other holders after the original offering and sale of the ETNs, or they may sell an ETN covered by this prospectus in short sale transactions. This prospectus will be deemed to cover any short sales of ETNs by market participants who cover their short positions with ETNs borrowed or acquired from us or our affiliates in the manner described above.

Broker-dealers and other market participants are cautioned that some of their activities, including covering short sales with ETNs borrowed from one of our affiliates, may result in their being deemed participants in the distribution of the ETNs in a manner that would render them statutory underwriters and subject them to the prospectus delivery and liability provisions of the Securities Act of 1933 (the "Securities Act"). A determination of whether a particular market participant is an underwriter must take into account all the facts and circumstances pertaining to the activities of the participant in the particular case, and the example mentioned above should not be considered a complete description of all the activities that would lead to designation as an underwriter and subject a market participant to the prospectus delivery and liability provisions of the Securities Act.

RBCCM or another FINRA member will provide certain services relating to the distribution of the ETNs and may be paid a fee for its services equal to all, or a portion of, the Investor Fee. RBCCM may also pay fees to other dealers pursuant to one or more separate agreements. Any portion of the Investor Fee paid to RBCCM or such other FINRA member will be paid on a periodic basis over the term of the ETNs. Although RBCCM will not receive any discounts in connection with such sales, RBCCM is expected to charge normal commissions for the purchase of any such ETNs. RBCCM will act as our agent in connection with any repurchases at the investor's option and may charge investors a fee of up to 0.125% times the daily repurchase value for each ETN repurchased at the investor's option. Additionally, it is possible that RBCCM and its affiliates may profit from expected hedging activities related to this offering, even if the value of the ETNs declines. The amount of the fees paid in connection with the ETNs that represent underwriting compensation will not exceed a total of 8% of the proceeds to us from the ETNs.

Conflicts of Interest

RBCCM is our affiliate. Any distribution of the ETNs in which RBCCM participates will conform to the requirements of FINRA Rule 5121. Client accounts over which RBCCM, its subsidiaries, or affiliates of its subsidiaries have investment discretion are not permitted to purchase the ETNs, either directly or indirectly, without the prior consent of the client. See "Plan of Distribution — Conflicts of Interest" in the prospectus.

MATERIAL UNITED STATES FEDERAL INCOME TAX CONSIDERATIONS

Prospective investors should note that the discussions under the sections entitled “Certain Income Tax Consequences, United States Taxation” in the accompanying prospectus and “Tax Consequences, United States Taxation” in the accompany prospectus supplement do not apply to the ETNs issued under this pricing supplement and is superseded by the following discussion.

The following is a general description of the material U.S. federal income tax considerations relating to the acquisition, ownership and disposition of the ETNs by a U.S. holder and a non-U.S. holder (each as defined below). It does not purport to be a complete analysis of all tax considerations relating to the ETNs. Prospective purchasers of the ETNs should consult their tax advisor as to the consequences under the tax laws of the country of which they are resident for tax purposes and the tax laws of Canada and the U.S. of acquiring, holding and disposing of the ETNs and receiving payments under the ETNs. This summary is based upon the Internal Revenue Code of 1986, as amended (the “Internal Revenue Code”), applicable U.S. Treasury regulations (including proposed regulations and temporary regulations) promulgated thereunder, judicial authority and administrative interpretations, as in effect on the date of this pricing supplement and is subject to any change in law that may take effect after such date (possibly with retroactive effect).

This section only applies to initial investors who acquire the ETNs in this pricing supplement and who hold the ETNs as capital assets for tax purposes. It does not apply to a holder who is included in a special class of holders subject to special rules, including: (i) a dealer in securities or currencies; (ii) a trader in securities that elects to use a mark-to-market method of accounting for its securities holdings; (iii) a tax-exempt organization or entity including an individual retirement and other tax-deferred account; (iv) a life insurance company; (v) a person that owns debt securities that are a hedge or that are hedged against interest rate or currency risks; (vi) a person that holds debt securities as part of a straddle, conversion transaction, constructive sale or other risk reduction transaction; (vii) a person that purchases or sells debt securities as part of a wash sale for tax purposes; (viii) a U.S. holder whose functional currency is not the U.S. dollar; (ix) a person subject to the alternative minimum tax; (x) a bank or other financial institution; (xi) a real estate investment trust, regulated investment company, partnership or other pass-through entity for U.S. federal income tax purposes; (xii) an investment company; or (xiii) a U.S. expatriate.

A U.S. holder is a beneficial owner of the ETNs who is: (i) a citizen or individual resident of the United States; (ii) a domestic corporation, or other entity taxable as a corporation for U. S. federal income tax purposes, created or organized in or under the laws of the United States or of any subdivision thereof; (iii) an estate whose income is subject to U. S. federal income tax regardless of its source; or (iv) a trust if a U. S. court can exercise primary supervision over the trust’s administration and one or more U. S. persons are authorized to control all substantial decisions of the trust.

If a partnership holds the ETNs, the U.S. federal income tax treatment of a partner will generally depend on the status of the partner and the tax treatment of the partnership. A partner in a partnership holding the ETNs should consult its tax advisor with regard to the U.S. federal income tax treatment of an investment in the ETNs.

NO STATUTORY, JUDICIAL OR ADMINISTRATIVE AUTHORITY DIRECTLY DISCUSSES HOW THE ETNS SHOULD BE TREATED FOR U.S. FEDERAL INCOME TAX PURPOSES. AS A RESULT, THE U.S. FEDERAL INCOME TAX CONSEQUENCES OF AN INVESTMENT IN THE ETNS ARE UNCERTAIN. BECAUSE OF THE UNCERTAINTY, HOLDERS SHOULD CONSULT THEIR TAX ADVISOR IN DETERMINING THE U.S. FEDERAL INCOME TAX AND OTHER TAX CONSEQUENCES OF THEIR INVESTMENT IN THE ETNS, INCLUDING THE APPLICATION OF STATE, LOCAL OR OTHER TAX LAWS AND THE POSSIBLE EFFECTS OF CHANGES IN FEDERAL OR OTHER TAX LAWS.

Tax Treatment of the ETNs. In the opinion of our counsel, Morrison & Foerster LLP, it would generally be reasonable to treat an ETN with terms described in this pricing supplement as a contingent income-bearing derivative contract linked to the Index for U.S. federal income tax purposes, and the terms of the ETNs require a holder and us (in the absence of a change in law or an administrative or judicial ruling to the contrary) to treat the ETNs for all U.S. federal income tax purposes in accordance with such characterization. In addition, we intend to treat Coupon Payments as U.S. source income for U.S. federal income tax purposes. The following discussion assumes that the treatment described in this paragraph is proper and will be respected.

U.S. Holder. Although the U.S. federal income tax treatment of the Coupon Payments is uncertain, we intend to take the position, and the following discussion assumes, that such Coupon Payments constitute taxable ordinary income to a U.S. holder at the time received or accrued in accordance with the holder’s regular method of accounting, and the terms of

the ETNs require a holder and us (in the absence of a change in law or an administrative or judicial ruling to the contrary) to treat such Coupon Payments in accordance with such characterization. If the ETNs are treated as described above, subject to the discussion below concerning the possible application of the “constructive ownership” rules under Section 1260 of the Internal Revenue Code, a U.S. holder should generally recognize capital gain or loss upon the sale, repurchase or maturity of the ETNs in an amount equal to the difference between the amount a holder receives at such time (other than amounts properly attributable to any Coupon Payment, which would be taxed, as described above, as ordinary income) and the holder’s tax basis in the ETNs. In general, a U.S. holder’s tax basis in the ETNs should equal the price the holder paid for the ETNs. Capital gain recognized by an individual U.S. holder is generally taxed at preferential rates where the property is held for more than one year and is generally taxed at ordinary income rates where the property is held for one year or less. The deductibility of capital losses is subject to limitations.

Possible Application of Section 1260 of the Internal Revenue Code. Because the Index Constituents are the type of financial assets described under Section 1260 of the Internal Revenue Code (i.e., equity interests in partnerships, a “Section 1260 Financial Asset”), while the matter is not entirely clear, there exists a substantial risk that an investment in an ETN is a “constructive ownership transaction” to which Section 1260 of the Internal Revenue Code applies. If Section 1260 of the Internal Revenue Code applies, all or a portion of any long-term capital gain recognized by a U.S. holder in respect of an ETN will be recharacterized as ordinary income (the “Excess Gain”). In addition, an interest charge will also apply to any deemed underpayment of tax in respect of any Excess Gain to the extent such gain would have resulted in gross income inclusion for the U.S. holder in taxable years prior to the taxable year of the sale or maturity (assuming such income accrued at a constant rate equal to the applicable federal rate as of the date of sale or maturity).

If an investment in an ETN is treated as a constructive ownership transaction, it is not clear to what extent any long-term capital gain of a U.S. holder in respect of the ETN will be recharacterized as ordinary income. It is possible, for example, that the amount of the Excess Gain (if any) that would be recharacterized as ordinary income in respect of the ETN will equal the excess of (i) any long-term capital gain recognized by the U.S. holder in respect of the ETN and attributable to Section 1260 Financial Assets, over (ii) the “net underlying long-term capital gain” (as defined in Section 1260 of the Internal Revenue Code) such holder would have had if such holder had acquired an amount of the corresponding Section 1260 Financial Assets at fair market value on the original issue date for an amount equal to the portion of the issue price of the ETN attributable to the corresponding Section 1260 Financial Assets and sold such amount of Section 1260 Financial Assets upon the date of sale, repurchase or maturity of the ETN (or the next rebalancing date of the Index) at fair market value, or it may be possible that Section 1260 of the Internal Revenue Code would apply separately to each Index Constituent. To the extent any gain is treated as long-term capital gain after application of the recharacterization rules of Section 1260 of the Internal Revenue Code, such gain would be subject to U.S. federal income tax at the rates that would have been applicable to the net underlying long-term capital gain. Holders should consult their tax advisors regarding the potential application of Section 1260 of the Internal Revenue Code to an investment in the ETN.

Under Section 1260 of the Internal Revenue Code, there is a presumption that the net underlying long-term capital gain is zero (with the result that the recharacterization and interest charge described above would apply to all of the gain from the ETNs that otherwise would have been long-term capital gain), unless the contrary is demonstrated by clear and convincing evidence. Holders will be responsible for obtaining information necessary to determine the net underlying long-term capital gain with respect to the Index Constituents, as we do not intend to supply holders with such information. Holders should consult with their tax advisor regarding the application of the constructive ownership transaction to their ETNs and the calculations necessary to comply with Section 1260 of the Internal Revenue Code.

Medicare Tax. A U.S. holder that is an individual or estate, or a trust that does not fall into a special class of trusts that is exempt from such tax, is subject to a 3.8% tax on the lesser of (1) the U.S. holder’s “net investment income” for the relevant taxable year (“undistributed net investment income” in the case of an estate or trust) and (2) the excess of the U.S. holder’s modified adjusted gross income (or, in the case of an estate or trust, adjusted gross income) for the taxable year over a certain threshold (which in the case of individuals is between \$125,000 and \$250,000, depending on the individual’s circumstances). A U.S. holder’s net investment income generally includes its interest income and its net gains from the disposition of property (such as the ETNs), unless such interest income or net gains are derived in the ordinary course of the conduct of a trade or business (other than a trade or business that consists of certain passive or trading activities). A U.S. holder that is an individual, estate or trust should consult its tax advisor regarding the applicability of the Medicare tax to its income and gains in respect of its investment in the ETNs debt securities.

Unrelated Business Taxable Income. A U.S. holder that is a tax-exempt organization or entity (including a retirement fund) for U.S. federal income tax purposes and therefore generally exempt from U.S. federal income taxation, will nevertheless be subject to tax to the extent income or gain from the ETNs constitutes unrelated business taxable income (“UBTI”). Although the matter is not free from doubt, income or gain from the ETNs should not constitute UBTI to a U.S.

holder that is a tax-exempt organization or entity unless such holder has incurred “debt-financing” in respect of its acquisition or ownership of the ETNs. As noted below, it is possible that an ETN could be treated as other than a contingent income-bearing derivative contract linked to the Index. Under one such alternative treatment, a U.S. holder that is a tax-exempt organization or entity could be treated as directly owning the Index Constituents. If the ETNs are so treated, a portion of any income or gain recognized with respect to the ETNs would generally constitute UBTI.

Information With Respect to Foreign Financial Assets. An individual U.S. holder who, during any taxable year, holds any interest in “specified foreign financial assets” with an aggregate value in excess of \$50,000 (and in some circumstances, a higher threshold) may be required to file an information report with respect to such assets with his or her tax returns. “Specified foreign financial assets” may include financial accounts maintained by foreign financial institutions, as well as any of the following, but only if they are not held in accounts maintained by financial institutions: (i) stocks and securities issued by non-U.S. persons, (ii) financial instruments and contracts held for investment that have non-U.S. issuers or counterparties, and (iii) interests in foreign entities. Under these rules, the ETNs may be treated as “specified foreign financial assets.” Holders are urged to consult their tax advisors regarding the application of this reporting requirement to their ownership of the ETNs.

Alternative Treatments. Alternative tax treatments would also be possible and the Internal Revenue Service might assert that a treatment other than that described above is more appropriate. For example, it would also be possible to treat the ETNs, and the Internal Revenue Service might assert that the ETNs should be treated, as a single debt instrument. Such a debt instrument would be subject to the special tax rules governing contingent payment debt instruments. If the ETNs are so treated, a U.S. holder would generally be required to accrue interest currently over the term of the ETNs irrespective of the amount of Coupon Payments, if any, made on the ETNs. In addition, any gain a U.S. holder might recognize upon the sale, repurchase or maturity of the ETNs would be ordinary income and any loss recognized by a holder at such time would generally be ordinary loss to the extent of interest that same holder included in income in the current or previous taxable years in respect of the ETNs, and thereafter, would be capital loss.

It is possible that the Internal Revenue Service could seek to tax the ETNs by reference to a holder’s deemed ownership of the Index Constituents. In such case, a U.S. holder could be required to recognize amounts of income, gain or loss as if such holder had actually owned interests in the Index Constituents. Under this alternative treatment, a U.S. holder could also be required to currently recognize gain or loss, at least some of which could be short-term capital gain (and possibly loss), each time the Index rebalances.

In addition and separate from an alternative tax treatment of deemed ownership of the Index Constituents, it is possible that a deemed taxable exchange has occurred on one or more of the Index rebalancing dates or that the ETNs could be treated as a series of derivative contracts, each of which matures on the next rebalancing date. If the ETNs were properly treated in such a manner, a U.S. holder would be treated as disposing of the ETNs on each rebalancing date in return for new derivative contract(s) that exchange or mature on the next rebalancing date, and such holder would accordingly likely recognize capital gain (but probably not loss) on each rebalancing date equal to the difference between the holder’s basis in the ETNs and the fair market value of the ETNs on such date.

The Internal Revenue Service has released a notice that may affect the taxation of holders of the ETNs. According to the notice, the Internal Revenue Service and the U.S. Treasury Department are actively considering whether the holder of an instrument similar to the ETNs should be required to accrue additional ordinary income on a current basis. It is not possible to determine what guidance they will ultimately issue, if any. It is possible, however, that under such guidance, U.S. holders of the ETNs will ultimately be required to accrue income currently (irrespective of the Coupon Payments) and this could be applied on a retroactive basis. The Internal Revenue Service and the U.S. Treasury Department are also considering other relevant issues, including whether additional gain or loss from such instruments should be treated as ordinary or capital and whether the special “constructive ownership rules” of Section 1260 of the Internal Revenue Code might be applied to such instruments. Holders are urged to consult their tax advisors concerning the significance, and the potential impact, of the above considerations. We intend to treat the ETNs for U.S. federal income tax purposes in accordance with the treatment described in this pricing supplement unless and until such time as the U.S. Treasury Department and Internal Revenue Service determine that some other treatment is more appropriate.

Non-U.S. Holders. The following discussion applies to non-U.S. holders of the ETNs. A non-U.S. holder is a beneficial owner of an ETN that, for U.S. federal income tax purposes, is not a U.S. holder or a partnership.

While the U.S. federal income tax treatment of the ETNs (including proper characterization of the Coupon Payments for U.S. federal income tax purposes) is uncertain, U.S. federal income tax at a 30% rate (or at a lower rate under an applicable income tax treaty) will be withheld in respect of the Coupon Payments paid to a non-U.S. holder unless such

payments are effectively connected with the conduct by the non-U.S. holder of a trade or business in the United States (in which case, to avoid withholding, the non-U.S. holder will be required to provide an Internal Revenue Service Form W-8ECI (or any applicable successor form)). We will not pay any additional amounts in respect of such withholding. To claim benefits under an income tax treaty, a non-U.S. holder must obtain a taxpayer identification number and certify as to its eligibility under the appropriate treaty's limitations on benefits article, if applicable (which certification may generally be made on an Internal Revenue Service Form W-8BEN, or W-8BEN-E, as applicable, or a substitute or successor form). In addition, special rules may apply to claims for treaty benefits made by corporate non-U.S. holders. A non-U.S. holder that is eligible for a reduced rate of U.S. federal withholding tax pursuant to an income tax treaty may obtain a refund of any excess amounts withheld by filing an appropriate claim for refund with the Internal Revenue Service. The availability of a lower rate of withholding or an exemption from withholding under an applicable income tax treaty will depend on the proper characterization of the Coupon Payments under U.S. federal income tax laws and whether such treaty rate or exemption applies to such payments. No assurance can be provided on the proper characterization of the Coupon Payments for U.S. federal income tax purposes and, accordingly, no assurance can be provided on the availability of benefits under any income tax treaty. Non-U.S. holders must consult their tax advisors in this regard.

Except as described below, a non-U.S. holder will generally not be subject to U.S. federal income or withholding tax on any gain (not including for the avoidance of doubt any amounts representing accrued Coupon Payments which would be subject to the rules discussed in the previous paragraph) upon the sale, repurchase or maturity of the ETNs, provided that (i) the holder complies with any applicable certification requirements (which certification may generally be made on an Internal Revenue Service Form W-8BEN, or W-8BEN-E, as applicable, or a substitute or successor form), (ii) the payment is not effectively connected with the conduct by the holder of a U.S. trade or business, and (iii) if the holder is a non-resident alien individual, such holder is not present in the U.S. for 183 days or more during the taxable year of the sale or maturity of the ETNs. In the case of (ii) above, the holder generally would be subject to U.S. federal income tax with respect to any income or gain in the same manner as if the holder were a U.S. holder and, in the case of a holder that is a corporation, the holder may also be subject to a branch profits tax equal to 30% (or such lower rate provided by an applicable U.S. income tax treaty) of a portion of its earnings and profits for the taxable year that are effectively connected with its conduct of a trade or business in the U.S., subject to certain adjustments.

A "dividend equivalent" payment is treated as a dividend from sources within the U.S. and such payments generally would be subject to a 30% U.S. withholding tax if paid to a non-U.S. holder. Under U.S. Treasury Department regulations, payments (including deemed payments) with respect to equity-linked instruments ("ELIs") that are "specified ELIs" may be treated as dividend equivalents if such specified ELIs reference an interest in an "underlying security," which is generally any interest in an entity taxable as a corporation for U.S. federal income tax purposes if a payment with respect to such interest could give rise to a U.S. source dividend. In particular, certain payments that are contingent upon or determined by reference to an interest in an entity that is not a corporation for U.S. federal income tax purposes, such as the Constituent MLPs, is treated as contingent upon or determined by reference to the allocable portion of any underlying securities or potential dividend equivalent transactions held directly or indirectly by such Constituent MLPs if such Constituent MLPs (1) carry on a trade or business of dealing or trading in securities, (2) hold significant investments in securities or (3) directly or indirectly hold an interest in a lower-tier partnership that deals in or trades in securities or holds significant investments in securities. A Constituent MLP holds significant investments in securities if either 25% or more of the value of the Constituent MLP's assets consist of underlying securities or potential dividend equivalent transactions or the value of the underlying securities or potential dividend equivalent transactions equals or exceeds \$25 million. However, this withholding on "dividend equivalent" payments, if any, will not apply to ETNs issued before January 1, 2017. If any payments are treated as dividend equivalents subject to withholding, we (or the applicable paying agent) would be entitled to withhold taxes without being required to pay any additional amounts with respect to amounts so withheld.

The ETNs could be treated as "United States real property interests" under Section 897 of the Internal Revenue Code. If the ETNs were so treated, certain adverse U.S. federal income tax consequences may apply to a non-U.S. holder that owns or is treated as owning more than 5% of the ETNs (or if the ETNs are not considered regularly traded on an established securities market), upon the sale, repurchase or maturity of the ETNs (including treatment of any gain recognized in respect of the ETNs as income effectively connected with the conduct of a U.S. trade or business and the imposition of a 10% U.S. withholding tax on gross proceeds). We currently do not intend to withhold on payments made with respect to the ETNs to non-U.S. holders (other than the payment of any Coupon Payments) provided that such non-U.S. holders comply with the applicable certification requirements. However, in the event of a change of law or any formal or informal guidance by the Internal Revenue Service, U.S. Treasury Department or Congress, or if we determine withholding is appropriate under current law, we may withhold on payments made with respect to the ETNs (in addition to the withholding on the Coupon Payments), and we will not be required to pay any additional amounts with respect to any such amounts withheld. Non-U.S. holders must consult with their tax advisor with regard to the consequences to them of an investment in the ETNs, including under Section 897 of the Internal Revenue Code.

As discussed above, alternative characterizations of the ETNs for U.S. federal income tax purposes are possible. Should an alternative characterization, by reason of change or clarification of the law, by regulation or otherwise, cause payments as to the ETNs to become subject to withholding tax in addition to the withholding tax described above, we will withhold tax at the applicable statutory rate and we will not be required to pay any additional amounts in respect of such withholding. Prospective investors should consult their own tax advisors in this regard.

Backup Withholding and Information Reporting. Payments made with respect to the ETNs and proceeds from the sale of the ETNs may be subject to a backup withholding tax unless, in general, the holder complies with certain procedures or is an exempt recipient. Any amounts so withheld generally will be refunded by the Internal Revenue Service or allowed as a credit against the holder's U.S. federal income tax, provided the holder makes a timely filing of an appropriate tax return or refund claim.

Reports will be made to the Internal Revenue Service and to holders that are not exempted from the reporting requirements.

Foreign Account Tax Compliance Act. The Foreign Account Tax Compliance Act ("FATCA") imposes a 30% U.S. withholding tax on certain U.S. source payments, including interest (and original issue discount), dividends, other fixed or determinable annual or periodical gain, profits, and income, and on the gross proceeds from a disposition of property of a type which can produce U.S. source interest or dividends ("Withholdable Payments"), if paid to a foreign financial institution (including amounts paid to a foreign financial institution on behalf of a holder), unless such institution enters into an agreement with the U.S. Treasury Department to collect and provide to the U.S. Treasury Department certain information regarding U.S. financial account holders, including certain account holders that are foreign entities with U.S. owners, with such institution or otherwise complies with FATCA. In addition, the ETNs may constitute a "financial account" for these purposes and thus, be subject to information reporting requirements pursuant to FATCA. FATCA also generally imposes a withholding tax of 30% on Withholdable Payments made to a non-financial foreign entity unless such entity provides the withholding agent with a certification that it does not have any substantial U.S. owners or a certification identifying the direct and indirect substantial U.S. owners of the entity. Under certain circumstances, a holder may be eligible for refunds or credits of such taxes.

The U.S. Treasury Department and the IRS have announced that withholding on payments of gross proceeds from a sale or redemption of the securities will only apply to payments made after December 31, 2018. If we determine withholding is appropriate with respect to the ETNs, we will withhold tax at the applicable statutory rate, and we will not pay any additional amounts in respect of such withholding. Foreign financial institutions and non-financial foreign entities located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules. Prospective investors are urged to consult with their tax advisor regarding the possible implications of FATCA on their investment in the ETNs.

SUPPLEMENTAL DISCUSSION OF CANADIAN FEDERAL INCOME TAX CONSEQUENCES

An investor should read carefully the description of material Canadian federal income tax considerations relevant to a Non-resident Holder owning debt securities under “Tax Consequences—Canadian Taxation” in the accompanying prospectus.

EMPLOYEE RETIREMENT INCOME SECURITY ACT

This section is only relevant to you if you are an insurance company or the fiduciary of a pension plan or an employee benefit plan (including a governmental plan, an IRA or a Keogh Plan) proposing to invest in the ETNs.

The Employee Retirement Income Security Act of 1974, as amended (“ERISA”), imposes certain requirements on “employee benefit plans” (as defined in Section 3(3) of ERISA) subject to ERISA, including entities such as collective investment funds and separate accounts whose underlying assets include the assets of such plans (collectively, “ERISA Plans”) and on those persons who are fiduciaries with respect to ERISA Plans. Each fiduciary of an ERISA Plan should consider the fiduciary standards of ERISA in the context of the ERISA Plan’s particular circumstances before authorizing an investment in the covered bonds. Accordingly, among other factors, the fiduciary should consider whether the investment would satisfy the prudence and diversification requirements of ERISA and would be consistent with the documents and instruments governing the ERISA Plan.

In addition, Section 406 of ERISA and Section 4975 of the Internal Revenue Code prohibit certain transactions involving the assets of an ERISA Plan, as well as those plans that are not subject to ERISA but which are subject to Section 4975 of the Internal Revenue Code, such as individual retirement accounts, including entities whose underlying assets include the assets of such plans (together with ERISA Plans, “Plans”) and certain persons (referred to as “parties in interest” or “disqualified persons”) having certain relationships to such Plans, unless a statutory or administrative exemption is applicable to the transaction. Governmental plans may be subject to similar prohibitions. Therefore, a plan fiduciary considering purchasing the ETNs should consider whether the purchase or holding of such instruments might constitute a “prohibited transaction.”

Royal Bank and certain of its affiliates each may be considered a “party in interest” or a “disqualified person” with respect to many employee benefit plans by reason of, for example, Royal Bank (or its affiliate) providing services to such plans. Prohibited transactions within the meaning of ERISA or the Internal Revenue Code may arise, for example, if the ETNs are acquired by or with the assets of a Plan, and with respect to which Royal Bank or any of its affiliates is a “party in interest” or a “disqualified person,” unless those ETNs are acquired under an exemption for transactions effected on behalf of that Plan by a “qualified professional asset manager” or an “in-house asset manager,” for transactions involving insurance company general accounts, for transactions involving insurance company pooled separate accounts, for transactions involving bank collective investment funds, or under another available exemption. Section 408(b) (17) provides an additional exemption for the purchase and sale of ETNs and related lending transactions where neither the issuer of the ETNs nor any of its affiliates have or exercise any discretionary authority or control or render any investment advice with respect to the assets of any Plan involved in the transaction and the Plan pays no more than “adequate consideration” in connection with the transaction. The person making the decision on behalf of a Plan or a governmental plan shall be deemed, on behalf of itself and any such plan, by purchasing and holding the ETNs, or exercising any rights related thereto, to represent that (a) such purchase, holding and exercise of the ETNs will not result in a non-exempt prohibited transaction under ERISA or the Internal Revenue Code (or, with respect to a governmental plan, under any similar applicable law or regulation) and (b) neither Royal Bank nor any of its affiliates is a “fiduciary” (within the meaning of Section 3(21) of ERISA) with respect to the purchaser or holder in connection with such person’s acquisition, disposition or holding of the ETNs, or any exercise related thereto or as a result of any exercise by Royal Bank or any of its affiliates of any rights in connection with the ETNs, and no advice provided by Royal Bank or any of its affiliates has formed a primary basis for any investment decision by or on behalf of such purchaser or holder in connection with the ETNs and the transactions contemplated with respect to the ETNs.

If you are an insurance company or the fiduciary of a pension plan or an employee benefit plan, and propose to invest in the ETNs, you should consult your legal counsel.

VALIDITY OF THE ETNS

In the opinion of Norton Rose Fulbright Canada LLP, the issue and sale of the ETNs has been duly authorized by all necessary corporate action of the Bank in conformity with the Indenture, and when the ETNs have been duly executed, authenticated and issued in accordance with the Indenture and delivered against payment therefor, the ETNs will be validly issued and, to the extent validity of the ETNs is a matter governed by the laws of the Province of Ontario or Québec, or the laws of Canada applicable therein, and will be valid obligations of the Bank, subject to equitable remedies which may only be granted at the discretion of a court of competent authority, subject to applicable bankruptcy, to rights to indemnity and contribution under the Notes or the Indenture which may be limited by applicable law; to insolvency and other laws of general application affecting creditors' rights, to limitations under applicable limitations statutes, and to limitations as to the currency in which judgments in Canada may be rendered, as prescribed by the Currency Act (Canada). This opinion is given as of the date hereof and is limited to the laws of the Provinces of Ontario and Québec and the federal laws of Canada applicable thereto. In addition, this opinion is subject to customary assumptions about the Trustee's authorization, execution and delivery of the Indenture and the genuineness of signatures and certain factual matters, all as stated in the letter of such counsel dated January 8, 2016, which has been filed as Exhibit 5.1 to Royal Bank's Form 6-K filed with the SEC on January 8, 2016.

In the opinion of Morrison & Foerster LLP, when the ETNs have been duly completed in accordance with the Indenture and issued and sold as contemplated by the prospectus supplement and the prospectus, the ETNs will be valid, binding and enforceable obligations of Royal Bank, entitled to the benefits of the Indenture, subject to applicable bankruptcy, insolvency and similar laws affecting creditors' rights generally, concepts of reasonableness and equitable principles of general applicability (including, without limitation, concepts of good faith, fair dealing and the lack of bad faith). This opinion is given as of the date hereof and is limited to the laws of the State of New York. This opinion is subject to customary assumptions about the Trustee's authorization, execution and delivery of the Indenture and the genuineness of signatures and to such counsel's reliance on the Bank and other sources as to certain factual matters, all as stated in the legal opinion dated January 8, 2016, which has been filed as Exhibit 5.2 to the Bank's Form 6-K dated January 8, 2016.

ANNEX A
FORM OF OFFER FOR REPURCHASE

PART A: TO BE COMPLETED BY THE BENEFICIAL OWNER

Dated: _____
[insert date]

Royal Bank of Canada (“Royal Bank”)
US_ETN_Trading@rbccm.com

Re: Yorkville MLP Distribution Growth Leaders LiquidSM PR Index Exchange Traded Notes due July 19, 2034 Linked to the Yorkville MLP Distribution Growth Leaders LiquidSM PR Index (“ETNs”)

Ladies and Gentlemen:

The undersigned beneficial owner hereby irrevocably offers to Royal Bank the right to repurchase the ETNs, as described in Amendment No. 4 dated January 8, 2016 to the Pricing Supplement dated July 24, 2014, in the amounts and on the date set forth below.

Name of beneficial holder: _____
[insert name of beneficial owner]

Stated principal amount of ETNs offered for repurchase (You must offer at least 50,000 ETNs (\$1,000,000 stated principal amount) for repurchase at one time for your offer to be valid.):

[insert principal amount of ETNs offered for repurchase by Royal Bank]

Applicable Valuation Date: _____, 20

Applicable Repurchase Date: _____, 20

[insert a date that is three Business Days following the applicable Valuation Date]

Contact Name: _____
[insert the name of a person or entity to be contacted with respect to this Offer for Repurchase]

Telephone #: _____
[insert the telephone number at which the contact person or entity can be reached]

My ETNs are held in the following DTC Participant’s Account (the following information is available from the broker through which you hold your ETNs):

Name:

DTC Account Number (and any relevant sub-account):

Contact Name:

Telephone Number:

Acknowledgement: In addition to any other requirements specified in the Pricing Supplement being satisfied, I acknowledge that the ETNs specified above will not be repurchased unless (i) this Offer for Repurchase, as completed and signed by the DTC Participant through which my ETNs are held (the “DTC Participant”), is delivered to Royal Bank by 4:00 p.m., New York City time, on the Business Day immediately preceding the applicable Valuation Date, (ii) the DTC Participant has booked a “delivery vs. payment” (“DVP”) trade on such applicable Valuation Date facing Royal Bank, and (iii) the DTC Participant instructs DTC to deliver the DVP trade to Royal Bank as booked for settlement via DTC at or prior to 10:00 a.m., New York City time, on the applicable Repurchase Date.

The undersigned acknowledges that Royal Bank will not be responsible for any failure by the DTC Participant through which such undersigned’s ETNs are held to fulfill the requirements for repurchase set forth above.

[Beneficial Holder]

PART B OF THIS NOTICE IS TO BE COMPLETED BY THE DTC PARTICIPANT IN WHOSE ACCOUNT THE ETNs ARE HELD AND DELIVERED TO ROYAL BANK BY 4:00 P.M., NEW YORK CITY TIME, ON THE BUSINESS DAY IMMEDIATELY PRECEDING THE APPLICABLE VALUATION DATE

BROKER'S CONFIRMATION OF REPURCHASE

[PART B: TO BE COMPLETED BY BROKER]

Dated: _____
[insert date]

Royal Bank of Canada ("Royal Bank")
US_ETN_Trading@rbccm.com

Re: Yorkville MLP Distribution Growth Leaders LiquidSM PR Index Exchange Traded Notes due July 19, 2034 Linked to the Yorkville MLP Distribution Growth Leaders LiquidSM PR Index

Ladies and Gentlemen:

The undersigned holder of Royal Bank of Canada Yorkville MLP Distribution Growth Leaders LiquidSM PR Index Exchange Traded Notes due July 19, 2034 Linked to the Yorkville MLP Distribution Growth Leaders LiquidSM PR Index ("ETNs"), issued by Royal Bank of Canada, CUSIP No. 78011D104, hereby irrevocably offers to Royal Bank the right to repurchase, on the Repurchase Date of __, with respect to the number of the ETNs indicated below as described in Amendment No. 4 dated January 8, 2016 to the Pricing Supplement dated July 24, 2014 relating to the ETNs (the "Pricing Supplement"). Terms not defined herein have the meanings given to such terms in the Pricing Supplement.

The undersigned certifies to you that it will (i) book a delivery vs. payment trade on the Valuation Date with respect to the stated principal amount of ETNs specified below at a price per ETN equal to the repurchase value, facing Royal Bank, DTC #235 and (ii) deliver the trade as booked for settlement via DTC at or prior to 10:00 a.m., New York City time, on the Repurchase Date.

Very truly yours,

[NAME OF DTC PARTICIPANT HOLDER]

Contact Name:

Title:

Telephone:

Fax:

E-mail:

Stated principal amount of ETNs offered for repurchase (You must offer at least 50,000 ETNs (\$1,000,000 stated principal amount) for repurchase at one time for your offer to be valid.):

DTC # (and any relevant sub-account):

ANNEX B

**YORKVILLE MLP DISTRIBUTION GROWTH LEADERS LIQUIDSM PR INDEX EXCHANGE TRADED NOTES
DUE JULY 19, 2034 LINKED TO THE YORKVILLE MLP DISTRIBUTION GROWTH LEADERS LIQUIDSM PR
INDEX**

REQUEST FOR THE CREATION OF NEW ISSUANCES

Broker's Name:

Telephone Number:

Aggregate number of ETNs:

DTC participant for settlement on behalf of the beneficial owner of the ETNs:

Contact Royal Bank for settlement details (US_ETN_Trading@rbccm.com)

Name:

Telephone: